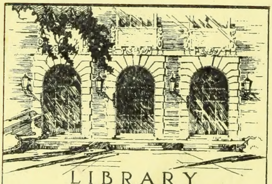


LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS

355.06
ROA
v.53^2

***NOTICE:* Return or renew all Library Materials! The *Minimum* Fee for each Lost Book is $50.00.**

The person charging this material is responsible for its return to the library from which it was withdrawn on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.
To renew call Telephone Center, 333-8400

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

SEP 13 1988
AUG 16 1988

L161—O-1096

Digitized by the Internet Archive
in 2014

https://archive.org/details/journalofroyalun5321rhod

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

JOURNAL

OF THE

Royal United Service Institution,

WHITEHALL, S.W.

PUBLISHED UNDER THE AUTHORITY OF THE COUNCIL

Authors alone are responsible for the contents of their respective Papers.

VOL. LIII.

JULY TO DECEMBER, 1909.

LONDON:
J. J. KELIHER & CO., LIMITED, 33, KING WILLIAM STREET, E.C.
AND CRAVEN HOUSE, KINGSWAY, W.C.

1909.

[*Entered at Stationers' Hall. All rights reserved.*]

INDEX.

JULY TO DECEMBER, 1909.

PAGE

ARTILLERY Support of Infantry. Major E. M. Molyneux, D.S.O., 12th Cavalry 1454, 1607

CAVALRY of Frederick the Great, The; its Training, Leading, and Employment in War. Major W. H. Greenly, D.S.O.,*p.s.c.*, 12th Lancers (*Lecture*) 1300

CHARLES I., The Execution and Burial of King. Rev. Canon Edgar Sheppard, C.V.O., D.D. (*Lecture*) 1019

COMMUNICATIONS of a Division in the Field, The. Colonel F. J. Davies, C.B., General Staff 885

ESSAY, *Third Prize;* subject, "Command of the Sea : What is it"? Lieutenant F. Fisher, R.N. 847

Ditto, *Fourth Prize.* Captain R. F. Phillimore, M.V.O., R.N. 991

FORTH and Clyde, Advantages, Strategical and Commercial, of a Battleship and Ocean-going Steamer Canal between the. Vice-Admiral Sir C. Campbell, K.C.M.G., C.B., D.S.O. (*Lecture*) 1415

FOOD Supplies, Our. Douglas Owen, Esq. (*Lecture*) 1551

FORTUNE of War, The. Lieut.-General H. D. Hutchinson, C.S.I. (*Lecture*) 865

HORSE Census, The Territorials and the Devonshire. Colonel J. C. Dwyer, A.V.D. 1634

IRELAND, The French Raid in, 1798, and Short Sketches of other Attempts and Landings on the Coast of the United Kingdom. Colonel H. W. Pearse, D.S.O. (*Lecture*) 1153

JAPANESE Army in 1908. Translated by permission of the Minister of War from the *Revue Militaire des Armées Etrangères* 1209, 1351, 1492, 1618

PENINSULA, The War in the, 1808-14. *Précis* by Major-General J. C. Dalton, R.A. 1066, 1202, 1342

PREPARATION and Development of an Action, German Tendencies with Regard to the. Captain F. Culmann, French General Staff 920, 1035

RASPLATA ("The Reckoning.") Commander Vladimir Semenoff, Imperial Navy. Translated by L. A. B. 901, 1049, 1174, 1327, 1481, 1626

READINESS or Ruin. T. Miller Maguire, M.A., LL.D. (*Lecture*) 1579

RUSSO-JAPANESE War, Lessons of the, Applied to the Training of Infantry. Condensed and Translated from the Japanese. Contributed by the General Staff 1190

SICILY. The Expedition to, 1718, under Sir George Byng. Captain H. W. Richmond, R.N. (*Lecture*) 1135

355.06
RDA
v. 53²

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

PAGE

SPANISH Succession War in Spain, with special reference to the British Action. J. H. Anderson, Esq., F.R.Hist. Soc., Barrister-at-law. (*Lecture.*) 1444

SUBMARINE Boats, The Present Condition of. Translated from *Nauticus*. Communicated by the Director of Naval Intelligence 1271

TERRITORIALS, Training for. Major J. Hastings, 6th Bn. W. Yorks R. 1471

WAR, Impending. *Resumé* from the Russian Military Journal *Razviedchik*. Communicated by the General Staff 1500

CORRESPONDENCE :—

LIEUTENANTS Home and Salkeld, Letters and Memoranda *re;* by Colonel E. T. Thackeray, R.E. 1525

PENINSULAR Battlefields of 1809 to 1812, How to visit the; by Brig.-General A. Bewicke-Copley 1382

PRISM Glasses; by Lieut.-General W. H. Mackesy 1662

SECRETARY'S Notes 845, 989, 1133, 1269, 1413, 1549

NAVAL Notes 932, 1077, 1220, 1358, 1503, 1638

MILITARY Notes 947, 1090, 1235, 1370, 1512, 1648

NAVAL and Military Calendar ... 961, 1103, 1247, 1389, 1528, 1665

CONTENTS of Foreign Periodicals ...961, 1104, 1248, 1389, 1529, 1665

NOTICES of Books 968, 1110, 1253, 1395, 1534, 1671

PRINCIPAL Additions to Library ... 970, 1111, 1255, 1397, 1536, 1674

RECENT Publications of Military Interest; compiled by the General Staff, War Office, April, 1909. Communicated by the General Staff 972

,, ,, July 1114, 1257, 1398

,, ,, October 1539, 1675

FRONTISPIECES :—

UNITED STATES Battleship *Idaho* ... ... Opposite 845

EXECUTION of King Charles I. in Front of Whitehall, 30th January, 1649 ... ... ,, 989

GERMAN First-class Battleship *Schleswig-Holstein* ... ,, 1133

OLD Print of Dunkirk, *circa* 1620 ... ... ,, 1269

GERMAN Turbine Cruiser *Stettin* ... ... ,, 1413

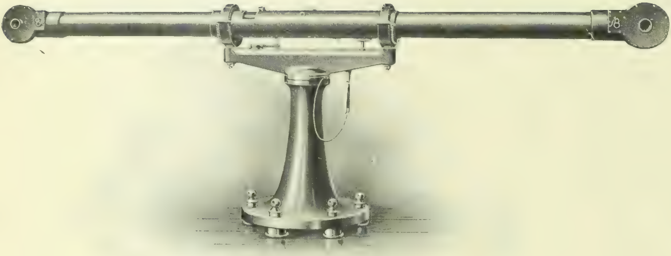
UNITED STATES First-class Battleship *North Dakota* ... ,, 1549

1203509

LIST OF AUTHORS AND TRANSLATORS.

PAGE
ANDERSON, J. H., Esq., F.R.Hist. Soc. (Spanish Succession War)... 1444
CAMPBELL, Vice-Admiral Sir C., K.C.M.G., C.B., D.S.O. (Battleship Canal Between the Forth and Clyde) 1415
CULMANN, Captain F., French General Staff. (German Tendencies with regard to the Preparation and Development of an Action) 920, 1035
DALTON, Major-General J. C., R.A. (The War in the Peninsula, 1808-14) 1066, 1202, 1342
DAVIES, Colonel F. J., C.B. (Communications of a Division in the Field) 885
DWYER, Colonel J. C., A.V.D. (Territorials and the Devonshire Horse Census) 1634
FISHER, Lieutenant T., R.N. (Third Prize Essay) 847
GREENLY, Major W. H., D.S.O., *p.s.c.*, 12th Lancers. (Cavalry of Frederick the Great.) 1300
HASTINGS, Major J., 6th Bn. W. Yorks R. (Training for Territorials) 1471
HUTCHINSON, Lieut.-General H. D. (The Fortune of War) 865
MACKESY, Lieut.-General W. H. (Prism Glasses.) (*Letter*) 1662
MAGUIRE, T. Miller, M.A., LL.D. (Readiness or Ruin) 1579
MOLYNEUX, Major E. M., D.S.O. (Artillery Support of Infantry) 1454, 1607
OWEN, Douglas, Esq. (Our Food Supplies) 1551
PEARSE, Colonel H. W., D.S.O. (French Raid in Ireland, 1798) ... 1153
PHILLIMORE, Captain R. F., M.V.O., R.N. (Fourth Prize Essay) 991
RICHMOND, Captain H. W., R.N. (Expedition to Sicily, 1718, under Sir George Byng.) 1135
SEMENOFF, Commander Vladimir, Imperial Russian Navy. (Rasplata) 901, 1049, 1174, 1327, 1481, 1626
SHEPPARD, Rev. Canon Edgar, C.V.O., D.D. (Execution and Burial of King Charles I.) 1019
THACKERAY, Colonel E. T., R.E. (*Letter*) 1525

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA



THE BARR AND STROUD RANGEFINDER.

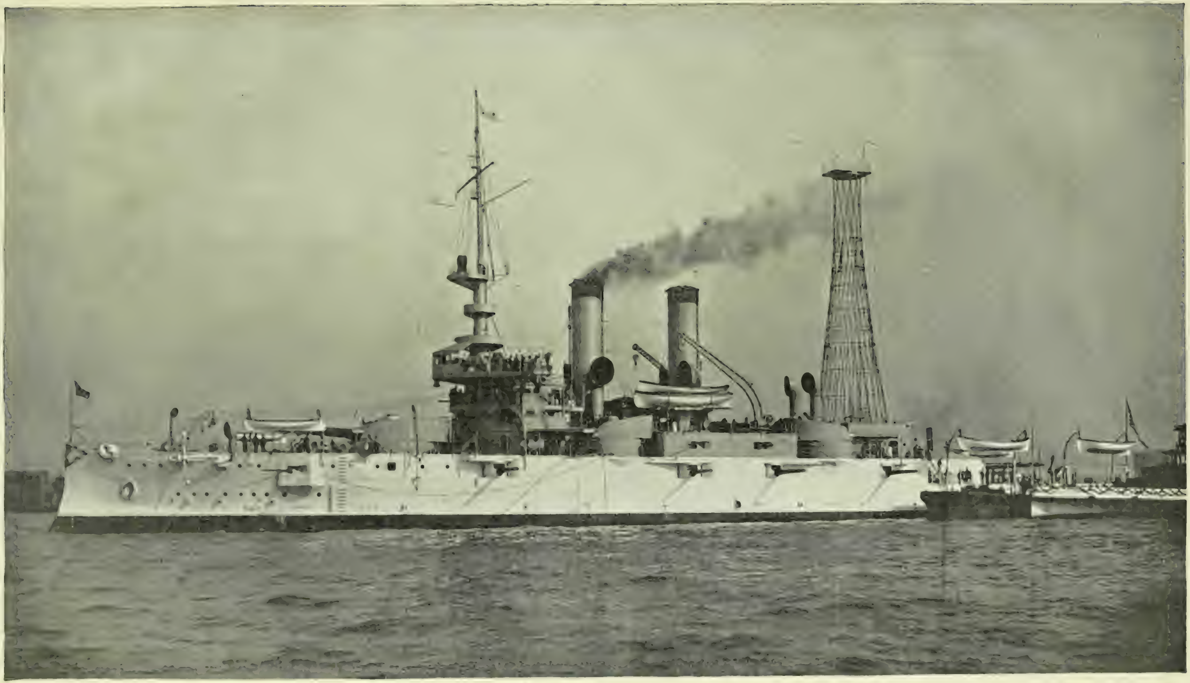
"F.R. TYPE." 15 FEET BASE.

For use on board Battleships, or in Fortresses.

Approximate uncertainty of observation:—
(Irrespective of the height of the Rangefinder above sea-level.)

1 yard at 1,500 yards.
5 yards ,, 3,000 ,,
30 ,, ,, 8,000 ,,
120 ,, ,, 15,000 ,,
210 ,, ,, 20,000 ,,

Barr and Stroud,
Anniesland,
Glasgow.



THE UNITED STATES FIRST-CLASS BATTLESHIP "IDAHO," SHOWING THE NEW LATTICE-WORK MAST ADOPTED IN THE U.S. NAVY.
13,000 Tons; 10,000 I.H.P.; Speed, 18 Knots.

ARMOUR PROTECTION.—Complete Krupp Steel Belt, 9 feet 3 inches broad, 9 inches thick tapering to 4 inches at extremities. Casemates and Bulkheads, 7 inches; Main Turrets, 12 to 8 inches, with 10 inches to 7.5 inches on barbettes. Secondary Turrets, 6 to 6.5 inches, with 4 to 6 inches on barbettes. Protective Deck, 1.5 inch, 3 inches on slopes.

ARMAMENT.—Four 12-inch, mounted in pairs in turrets, fore and aft; eight 8.8-inch, mounted in pairs in turrets at the four corners of the citadel; eight 7-inch

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. JULY, 1909. No. 377.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

ERRATUM.

JUNE JOURNAL–

"Rasplata," page 782–line 9.

For "*up*" read "*all*."

June :—
er Regt.

re Regt.

n Regt.

Lieutenant C. J. Burke, Royal Irish Regiment.
Captain A. W. Barrett, 25th Bn. The London Regiment.
Captain H. Maddick, 5th Lancers.
Captain W. C. Symon, R.H.A.
Lieutenant A. P. Pyne, Army Motor Reserve.
Major F. G. H. Davies, Indian Army.
Lieutenant A. C. Milne-Home, Northumberland Fusiliers.
Second Lieutenant R. F. Morgan, North Staffordshire Regiment.
Second Lieutenant W. A. Allen, A.S.C. (T.)
Second Lieutenant G. F. Plowden, Oxfordshire and Buckinghamshire Light Infantry.
Captain A. T. Hunt, R.N.
S. Roberts, Esq., late Lieutenant, Nilgeri Volunteers.
Captain Honble. A. F. W. Harris, King's Royal Rifle Corps.
Lieut.-Colonel W. A. Dring, C.I.E., East India Railway Vol. Corps.
Colonel W. Gordon (retired pay).
Captain A. S. W. Moffat, Border Regiment.
Captain C. L. K. Campbell, 16th Lancers.
Second Lieutenant G. F. de Teissier, Scots Guards.
Major J. L. Findlay, R.F.A. (T.)
Major L. J. Hext, R.F.A.
Lieut.-Colonel G. A. Emerson, late I.M.S.
Lieutenant T. C. A. Blomefield, R.N.
Lieutenant C. H. Malden, R.M.L.I.

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. JULY, 1909. No. 377.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

The following officers joined the Institution during the month of June :—

Captain T. D. Jackson, D.S.O., King's Own Royal Lancaster Regt.
Captain S. G. Faber, R.E.
Lieutenant Honble. H. C. R. Feilding, R.N.
Captain Honble. W. H. Littleton, 3rd Bn. North Staffordshire Regt.
Lieutenant P. Mortimer, Indian Army.
Second Lieutenant C. H. F. Thompson, 5th Bn. The London Regt.
Lieutenant E. H. L. Beddington, 16th Lancers.
Lieutenant G. H. Dennistoun, R.N.
Lieut.-Colonel A. Ross, Engineer and Railway Staff Corps.
Lieutenant E. J. A. Fullerton, R.N.
Lieutenant G. E. Lewin, R.N.
Lieutenant C. J. Burke, Royal Irish Regiment.
Captain A. W. Barrett, 25th Bn. The London Regiment.
Captain H. Maddick, 5th Lancers.
Captain W. C. Symon, R.H.A.
Lieutenant A. P. Pyne, Army Motor Reserve.
Major F. G. H. Davies, Indian Army.
Lieutenant A. C. Milne-Home, Northumberland Fusiliers.
Second Lieutenant R. F. Morgan, North Staffordshire Regiment.
Second Lieutenant W. A. Allen, A.S.C. (T.)
Second Lieutenant G. F. Plowden, Oxfordshire and Buckinghamshire Light Infantry.
Captain A. T. Hunt, R.N.
S. Roberts, Esq., late Lieutenant, Nilgeri Volunteers.
Captain Honble. A. F. W. Harris, King's Royal Rifle Corps.
Lieut.-Colonel W. A. Dring, C.I.E., East India Railway Vol. Corps.
Colonel W. Gordon (retired pay).
Captain A. S. W. Moffat, Border Regiment.
Captain C. L. K. Campbell, 16th Lancers.
Second Lieutenant G. F. de Teissier, Scots Guards.
Major J. L. Findlay, R.F.A. (T.)
Major L. J. Hext, R.F.A.
Lieut.-Colonel G. A. Emerson, late I.M.S.
Lieutenant T. C. A. Blomefield, R.N.
Lieutenant C. H. Malden, R.M.L.I.

Second Lieutenant F. B. Osborne, R.F.A. (T.)
Lieutenant J. P. R. Marriott, R.N.
Lieutenant H. C. Cumberbatch, Yorkshire Regiment.
Captain H. J. L. Clarke, R.N.
Captain R. K. Healing, West Riding Regiment.
Captain G. P. E. Hunt, D.S.O., R.N.
Major W. S. Prentis, Indian Army.
Lieutenant W. N. Custance, R.N.
Lieutenant F. S. Thackeray, Highland Light Infantry.
Major The Earl of Liverpool, M.V.O., 6th Bn. The Rifle Brigade.
Second Lieutenant B. C. T. Paget, Oxfordshire and Buckinghamshire Light Infantry.
Captain J. Bois, King's Own Royal Lancaster Regiment.
Captain G. R. Breading, D.S.O., Worcestershire Regiment.
Lieutenant H. S. Wilson, Royal Munster Fusiliers.
Captain W. E. Maples, West Riding Regiment.
Sub-Lieutenant E. C. Miller, R.N.R.
Lieut.-Colonel F. C. Muspratt, Indian Army.

II. During the first half of the year 1909 the number of officers who joined the Institution amounted to 188. The various branches were represented as follows:—

Regular Army	115	
Royal Navy	29	
Territorial Force (including Yeomanry)	22	
Special Reserve	10	
Royal Marines	5	
Indian and Colonial Volunteers	4	
R.N.R.	3	
	——	188

III. CLOSING OF THE BUILDING.

The building will be closed for cleaning purposes from Monday, 16th August, to Saturday, 28th August, inclusive. The Museum will be open as usual.

IV. ARRANGEMENTS AT LECTURES.

The Council has decided to extend to ex-members of the Council the privilege of occupying the front bench in the Lecture Theatre at lectures.

V. ADDITIONS TO THE MUSEUM.

6002. Helmet-Plate of the King's Own Royal Tower Hamlets Militia, worn from 1878 to 1881.
—*Given by Major H. Huntington, 6th Bn. The Rifle Brigade.*

6003. A Water Colour Painting executed on board H.M.S. *Northumberland* of Napoleon I. at the time when the ship was on her voyage to St. Helena.

6004. Twenty-four Aquatint Engravings, after T. Rowlandson, of Hungarian and Highland Broad Sword Exercise, published in 1799 by H. Angelo, Curzon Street, Mayfair.
—*Given by Colonel A. Bibby, late 4th Hussars.*

6005. Belt-Buckle and Shako-Plate of the 8th The King's Regiment.
—*Given by Captain J. C. Cooper.*

3359. Walking-stick, formed from the jaw of a sword-fish, taken from the Palace of Tippoo Sahib after the storming of Seringapatam.—*Deposited by T. H. Babbage, Esq.*

THIRD ESSAY.

Honourably Mentioned.

Subject:—

"THE COMMAND OF THE SEA: WHAT IS IT?"

By Lieutenant T. FISHER, R.N.

Motto:—
"Non Sibi, Sed Patriæ."

THE title of this Essay is a phrase in every-day use that is often employed with no clear conception of its meaning.

Does it mean, for example, the power to invade a hostile country across an intervening sea? Or perhaps the power to conduct a military raid across this sea? Or again, does it mean the ability to crush one's enemies' over-sea trade whilst fostering one's own?

It is within everyone's experience that it has at times been employed to express all these conditions. According to one school of thought, the Japanese in their late war with Russia did not obtain true command of the sea until the destruction of the Baltic Fleet at Tsushima; and not even then if by command of the sea is meant the power to control and destroy the sources of the opponent's over-sea commerce. According to another, and perhaps more practical, view, they obtained this command when, after the first success on the night of 8th February, 1904, they were able to transport to, and maintain in, Manchuria an invading army.

Thus it is impossible for us to decide what constitutes Command of the Sea unless we have a clear idea of the purpose this command is to serve. To refer again to the Russo-Japanese war, it is evident that the relative economic and geographic situation of the belligerent Powers was such that by no possible means could Japan establish that sort of sea command over Russia that we established over France at the close of the great wars.

This being admitted, Command of the Sea as between two nations, the principal seats of whose power are separated by the sea, will be defined as: "*The bringing about of such a state of affairs on the sea as will allow of one belligerent developing its full national power towards the attainment of the object for which the war is waged.*"

A brief consideration of this definition shows that the means employed to obtain this command will differ for every nation according to its situation, geographic, economic, and military, with reference to its possible opponents. For example, the United States would require to use very different instruments to impose its will on this country to those it would require to coerce Japan, though both are island Powers, and this difference in means employed is solely due to the relative situations of the countries concerned.

It follows, then, that the meaning of the term Command of the Sea differs for each country, and as it is not our business to elucidate the problems of other nations, we shall confine ourselves strictly to considering what this command means for Great Britain, and what instruments she will require to obtain it.

In this enquiry we shall be greatly aided by the experience of the past, for in the annals of this country can be found examples of war waged under almost all conceivable conditions. If by this enquiry into the past we can determine the instruments of this country's power in the past, we should be able, by making due allowance for the changes in material, to determine by what means we to-day may impose our will on possible opponents.

In general the wars which Great Britain has waged in the past fall into two categories, which, to borrow the expression of Mr. Corbett, can conveniently be termed:—

1. Limited Wars.
2. Unlimited Wars.

The distinction between these two forms of warfare may be seen in a fight between two small boys for the possession of an apple, or in a fight between the same boys for the leadership of a class. In case 1, the apple once disposed of, the relative status of the boys is not much affected; but in case 2, the effect is probably permanent if any decision is reached at all; and if no decision is reached, that is to say, if one boy is not permanently subdued by the other, the quarrel is almost sure to break out again and again until a decision is reached. And so it is with the wars of nations: there are wars for existence and wars for an apple. And though, as with small boys, the apple may sometimes prove the pretex for unlimited war, yet it will not do so unless other and deeper sources of difference exist.

As examples of limited wars, we have the Russo-Japanese war, Hispano-American war, etc. Of unlimited wars we have the Franco-Prussian war of 1870, for the hegemony of Europe, the American Civil war, the Anglo-Dutch wars, and the long series of wars between Rome and Carthage. Of limited wars which became unlimited we have the Seven Years' war, which, in its inception, was a war for supremacy in North America, yet in its results led to the long series of wars which terminated in Trafalgar and Waterloo, and determined for over a century the maritime and commercial preponderance of Great Britain.

The operations of war may be divided into two broad divisions:—

1. *The general conduct of the campaign.*
2. *The particular conduct of fleets and armies.*

The former is decided on by balancing the often conflicting demands of strategy and political considerations, domestic, and foreign. The latter, by balancing the often conflicting demands of minor strategy and tactics with the limitations imposed by the general conduct of the campaign as decided above.

Perhaps the best known example of the influence of politics on strategy is in the late war in South Africa, where the military operations were much prolonged and the cost greatly increased owing to the necessity of not alienating the burghers by harsh measures, or ruining the country in an economic sense due to a political decision to incorporate the Republics within the Empire.

Of the influence of the general plan of compaign on tactics, perhaps the best known example is the conduct of Lord Torrington, which gave rise to the now classic expression: "A Fleet in Being."

An example of failure to grasp these principles is afforded by Admiral Byng's conduct off Minorca in 1756. In this case the army of Richelieu was Byng's real objective, and his turn would have been served by taking up a position to cut off the supplies needed for the siege of Port Mahon, thereby obliging Galissoniere to assume the offensive or weaker form of tactics. As is well known, this was not the course pursued by Byng. Indeed, failing a genius for command, it is hard to see how any admiral could be fairly expected to so fly in the face of the then accepted opinion that at all times and seasons the enemy's fleet is the objective, and that it must be attacked at all hazards.

These considerations make it certain that no military or naval operations of the past can be usefully employed to elucidate our problems of to-day, unless we thoroughly master the political and economic conditions of the times. In this light, then, let us consider two of the greatest struggles in which this country has ever engaged:—

1. The Dutch wars as an example of unlimited war and concentration of naval force.
2. The Seven Years' war as an example of the class of limited wars, and of the causes which induce the dispersion of naval force.

The Dutch Wars.

These wars are probably the most purely maritime of any ever waged between two great nations. The underlying cause of Anglo-Dutch hostility appears to have been the wish of the former Power to share in the benefits of the *entrepôt* system established by the latter.

The fact that England emerged from these wars far stronger as a commercial and colonial Power than she entered is generally held to prove the efficacy of a purely maritime offensive.

There were, however, other factors of great importance that must not be overlooked in considering the results of the war, viz.:—

1. The rising national power of England as compared to Holland, acting in peace no less than in war to modify their respective situations.
2. The pre-occupation of the Dutch with Continental affairs.
3. The very advantageous geographical situation of England as compared to Holland.

The relative unimportance of military (used in the wide sense as including naval) operations, as compared with economic conditions, in shaping the destiny of nations, is well shown in the outcome of the third Dutch war. This, from a naval point of view, was probably the least successful of the three great struggles, yet a few years after its close we find England firmly established in Holland's place as the *entrepôt* of Europe. No unprejudiced person can doubt that this state of affairs was in reality brought about by our advantageous situation, and was not the result of the war.

By far the greater proportion of the sea fights in all three wars took place between great fleets in close proximity to the English shores. They were due directly or indirectly to attempts on the part of the Dutch to cover the passage of their trade past the English coasts. The Dutch were therefore obliged to take the offensive, which, contrary to the usually accepted opinion, is almost invariably the weaker form of war.

The weakness of the offensive lies partly in the increased length of the lines of communication, and partly in the actual tactical disadvantages of the attack, both of which were well exemplified in the late unfortunate voyage of Admiral Rodjestvensky. The question is exhaustively treated by Clausewitz, and much of his reasoning applies equally to naval and military operations.

It is probable that the English bias in favour of the offensive is due to the French wars. The advantageous situation of France forced us to adopt this form of war, and the great efficiency of our fleets enabled us to overcome, and so obscure, its inherent weakness.

The importance of England's geographical position in determining the result of these wars is well shown by the events of the year 1667, when the English fleets were deliberately laid up for reasons of economy. The Dutch, though able to sail up the Thames and lay waste the shores of Kent, were quite unable to stop the English trade at the numerous Western ports; whereas the trade of the victorious Dutch could only with great difficulty be conveyed past the hostile coasts of England, all of whose numerous harbours contained potential enemies.

The outstanding feature of these wars was the concentration of the whole of each nation's naval force into huge fleets, and the obstinate fashion in which these fleets disputed the mastery of the sea. This course seems to have been forced upon the Dutch by the necessity of securing a safe passage to their trade.

Trade in those times was conducted by fleets sailing at regular seasons. The English were obliged, in self defence, to follow suit, though their interests would have been better served by dispersion, than by concentration of force.

In the earlier wars the Dutch appear to have as far as possible avoided action, with the ulterior object of passing the trade through the danger zone. Experience taught them that the only effective way to do this was to defeat the English fleets, and, failing this, they laid up their merchant fleets entirely.

The injury to the Dutch over-sea trade was greatest during the first war; yet their national trading capacity was not much injured since a year or two after the first war their shipping trade attained the zenith of its prosperity.

In the third war, on the contrary, not nearly so complete a stop was put to their trade, yet soon after its close we find that England had usurped Holland's place as European carrier.

From this we must conclude that it is necessary to look to other sources than naval power to find the cause of the rise and fall of commercial nations. Naval power alone is unable to inflict vital injury, even on the most commercial of communities.

One other lesson we can draw, and that is, that where a real struggle for the mastery of the sea takes place, all available ships will be pressed into the service, and secondary objects will be neglected until the main issue is decided.

In this connection, a great advantage rests with the fleets which strategic conditions enable to fight in their own home waters. The effective force of their fleets is greater, and also small vessels can be pressed into the service and made use of.

An analysis of the growth of the Navy during this epoch shows that heavy fighting tends to increased size of units, and contributes to the unification of types.

It is noteworthy that the increased size of ships during this period of hard fighting was entirely directed to increasing the armament, and that the "enduring mobility," as it is expressed by "Barfleur," remained the same.

Exactly the opposite occurred during the revolutionary wars. The increase of size was then devoted to increasing the "enduring mobility." This is the natural corollary of widely spread operations for the maintenance, and not the attainment, of sea command.

—	1660.	1675.	Increased or Decreased Percentage.
Line-of-battle ships	30	39	+ 31 %
Intermediates	45	37	– 13 %
Cruising craft	53	24	– 55 %

In 1649 the size of the average line-of-battle ship then building was 515 tons.

In 1659, after the first Dutch war, it was 816 tons.

Percentage increase, devoted principally to armament, 60 per cent.

THE SEVEN YEARS' WAR.

During the greater part of this war the armed forces of Great Britain were directed by the elder Pitt, the greatest of English War Ministers. Throughout the war the military and naval forces were co-ordinated with a skill never equalled before or since. It is this fact that makes the study of this war so peculiarly important to naval officers.

We must remember that as between France and England the object of this war was nothing less than the control of North America. The genesis of the quarrel lay in the attempt of the French, from their positions in Canada and the Mississippi, to get control of what would now be called the "Hinterland" of our New England Colonies. Owing to the strength and vitality of the English Colonies, and the advantage they derived from Great Britain's preponderance at sea, it was fairly clear that unless considerable military aid was forthcoming from France, the struggle must end in the defeat of the French in America.

Pitt's main plan of campaign was, therefore:—

1. To take a vigorous offensive in Canada, devoting to this purpose every available man.
2. To hinder as far as might be the despatch of succour to Canada from France.
3. To so conduct the war in Europe, by availing himself to the full of the strength given by standing on the defensive, that France should be unable to make conquests which must, at the peace, be exchanged against the expected acquisitions in America. To this end he availed himself of the alliance with Frederick, and maintained an English contingent in Germany under Prince Ferdinand. It was of the essence of his system that this contingent should not be of greater force than was required to hold France in check. The combined naval and military

> attacks on the coast of France must be regarded as a part of this defensive system, as their intention and effect was to reduce the pressure on Ferdinand and Frederick.

The West Indian expeditions, conducted after the North American campaign was concluded, had a two-fold intention :—

1. To acquire something to exchange against Minorca at the peace.
2. To bring added pressure on the French Court to make peace.

The French plan of campaign, as commenced by Marshal Belleisle and developed by the Duc de Choiseul, aimed at obtaining such successes in Europe as, at the best, should oblige the English to make peace before the conquest of Canada was completed; or, at the worst, should provide on the Continent and Minorca something which in exchange would enable France to maintain her footing in the New World.

These objects may appear to some as trivial, but it must be remembered that at that time the war fleets of all the maritime Powers could only be mobilised by pressing men from the merchant shipping. It was therefore essential for a maritime State to have a flourishing merchant marine, manned in peace by its own nationals. Under the prevailing navigation laws and the strict Colonial system in vogue, this merchant marine could only be obtained by the possession of Colonies; hence the importance of the West Indies and the North American Fisheries to France.

The failure of the French plan of campaign forced them as a last resort to attempt the invasion of England. Two schemes were prepared: the first by Marshal Belleisle in 1759, depended essentially on "evasion"; the second by Choiseul in 1762 depended on the idea of decoying the English home fleets away, and by an unexpected concentration securing the temporary command of the Channel. The measures taken to provide against these threats are of great interest, as they show the nature of the force required to frustrate an invasion project.

In case (1), the main French fleet in Brest was kept under observation by Hawke's battle fleet, with detachments to watch those ports where transports were assembling. In the Channel were two cruiser squadrons under Rodney and Boys. It was these two squadrons, whose strength lay in a number of weak units, that actually commanded the Channel and denied it to the enemy, and it should be noted that this work could not have been adequately performed by capital ships.

The defeat of Conflans by Hawke on 20th November, 1759, put an end to Belleisle's plan. True, the transports were not destroyed, but without a covering squadron of ships of the line, invasion by "evasion" was impossible owing to the ubiquity of the English cruisers. And this again shows that light ships of no great individual power but very numerous were essential to the defence of the country.

With regard to plan (2), it need only be said that elaborate as were the decoys devised by Choiseul, they failed to draw the British Government, and strong fleets were so placed as to prevent the French concentrating. It is worth noting that as far as the French were concerned, a hard-fought action, even if they proved victorious, was a strategic defeat, since in their battered state they would be unable to secure their transports against the small squadrons of light ships always maintained by England in the Channel. Here again it is the light ship that commands the sea, the function of the capital vessel being to contain similar ships belonging to the enemy. If the object of the enemy be invasion, the containing fleet is placed in a position of peculiar advantage, for it is open to it to maintain a defensive attitude until its objective (the transport and troops) is within reach. The only way then open to the invader to avoid fighting encumbered by his transports, is to seek a fleet action beforehand, which in those days involved the tactical disadvantages of the attack.

The Seven Years' War provides examples of every kind of naval and military action, save one. We have:—

1. Continental warfare, in which British troops served under Prince Ferdinand.
2. Colonial warfare in America and India.
3. Combined naval and military "continuing raids," as at St. Lucia and Belleisle.
4. Combined naval and military "simple raids," as at St. Malo and Rochefort.
5. Attack and defence of sea-borne commerce.
6. Defence of the home country against invasion.

The one operation we miss is the clash of equal navies fighting for supremacy.

With this reservation in mind, let us trace the effect of the war on the national armaments.

It appears from a Parliamentary vote taken in 1755 that provision was made for 50,000 seamen and 35,000 Regular troops at the outbreak of the war. During the war it was found necessary to augment considerably the military forces, and in 1762 we find that some 20,000 British troops were employed under Ferdinand with some 70,000 Germans in English pay, whilst at the same time some 15,000 troops were taking part in the attack on Havana under Albemarle, and some 6,000 more in Portugal under Tyrawley. Thus it appears that independently of the garrisons, some 40,000 field troops were employed abroad.

In 1760 the Spanish Army was estimated at 91,000 men, that of France at about 187,000, whilst the field armies of Frederick of Prussia did not at any time much exceed 100,000

(Guerre de Sept Ans, Waddington, Vol. 4). Thus it will be seen that the force maintained by Great Britain bore no inconsiderable proportion to the available forces of the other great Powers. This is of great importance when we consider the relative positions to-day. The enforcing of the Militia Ballot Act made it fairly easy to maintain these troops abroad, since service in the Militia was so unpopular that, once embodied, little difficulty was found in inducing men to serve abroad.

The result of the war on the list of the Navy is shown in the following table:—

—	1756.	1762.
Ships of the Line	142	141
Intermediates	38	45
Cruisers	45	97
Flotilla...	48	84

It appears that the war led to a great increase in the number of cruising ships, whereas the capital ships and intermediates show no increase; the intermediates would indeed show a decrease were it not for the descent of the older and smaller line of battleships to this class.

The same tendency is found in all the wars of the 18th century, where the initial maritime preponderance was with England.

—	Increase of Cruising Ships. Percentage.
Spanish Succession	100 %
Seven Years	91 %
American Independence	195 %
French Revolution	208 %

In all the above cases except the War of American Independence the number of ships of the line is not appreciably increased, but in that war, owing to the strength of the allies it was necessary to increase the number of capital ships by some 33 per cent.

A further remarkable effect of these maritime over-sea wars is the steady reduction in the proportion of three-deckers among the capital ships from 28 per cent. in 1702 to 14 per cent. in 1815.

We may therefore draw the deduction that in past wars of the same general character as the Seven Years' War, the military power of England was directed into three principal channels:—

1. The provision of a fleet of capital ships adequate, but not more than adequate, to contain the capital ships of the enemy.

2. The development of as large a fleet of cruising ships as the maritime resources of the country would allow.
3. Last, but not least, the formation of a military striking force smaller but comparable to the field armies of other Powers, and capable of inflicting severe injuries on those Powers.

Mobility and fighting power in ships were then antagonistic, as indeed they are now, and we see from the decreased proportion of three-deckers that in the absence of hostile fleets of equal power, mobility tends to displace power in the capital ship.

CHANGES INTRODUCED BY MODERN CONDITIONS.

Let us now consider briefly the changes which have taken place since this country was last engaged in maritime warfare.

1. *No great Areas of Desirable Land Inhabited by Savages Now remain Unappropriated.*

The more valuable of these lands, as Australia and Canada, are so settled that apart from the military force of Great Britain, it would be almost impossible for any Power to effectually occupy them against their will. Thus the primary cause of the greater number of limited wars of the past is to a great extent eliminated.

2. *The Rise of Great Maritime Powers outside Europe.*

Against these Powers the traditional war policy of Great Britain is almost useless. Their distance and the lack of suitable bases would prevent their capital ships being effectively contained without dangerously weakening the fleet in the narrow seas, which is at present our only safeguard against invasion by any one of the military States of Europe. No effective commercial pressure could be brought to bear on these States, whereas our widespread commercial interests would be exposed to systematic attack. Further, where military power exists side by side with naval, as in the case of Japan, such distant possessions as Hong Kong and Singapore would be most difficult to defend.

3. *Increase in the Number and Power of the Neutral Maritime States.*

This is of the greatest importance to Great Britain. The traditional policy of this country to proceed against its adversary by the slow process of economic pressure rather than by the direct one of military force inflicts great loss and hardship on neutrals, and in the past—as in 1812—has more than once led to war. It is certainly arguable that in a long-drawn-out struggle with a Power like Germany, the injuries inflicted on American commerce by an effort on our part to strangle our adversary might lead to armed intervention. And in these cases it should be noted that it is always the preponderant maritime Power that excites the hostility of neutrals.

4. *Steam Propulsion.*

It would appear that the substitution of steam for sails has in the main been advantageous to the preponderant maritime Power. It has also greatly reduced the hostility of foreigners to this country, and so diminished the chances of war. The reason for this is that in the days of sail the strength of the fleet depended on the merchant navy, from which the seamen required on mobilisation were drawn. These considerations led to the famous Navigation Acts, which fostered Great Britain's carrying trade, sometimes even at the expense of her commercial interests, and always to the detriment of foreign nations, who in return cordially detested the restraint thus put upon them.

The number of ports capable of succouring and refitting a modern fleet or single warship are far less numerous than was formerly the case, and consequently the containing operations of the preponderating Power are facilitated.

Further, the attack on commerce by the weaker Power is more difficult than formerly, whereas the discovery and consequent crippling of the commerce destroyer is somewhat easier. This follows from the fact that the "time capacity" of the modern cruiser, on which depends her value as a commerce destroyer, is less than that of the old-time frigate, whereas her "space capacity," which governs her use as a commerce protector, is somewhat greater than that of her prototype.[1]

5. *Railways.*

It is certain that railways are, in their effects, disadvantageous to the preponderating maritime Power, and this in four principal ways:—

a. The reduced importance of the coasting trade.
b. The reduced effect of blockade, owing to the facility with which goods can be passed through neutral ports and thence by rail to their destination.
c. The facility with which troops can be collected to repel any raids, such as those on Cadiz or Rochefort, and consequently the reduced effect which the anticipation of such raids will have on the enemy's military dispositions. For example, in 1757, when every man was urgently required in Germany, some

---

[1] It is usual in current literature to measure a ship's sphere of activity, if confined to her own resources, by what is called her "Radius of Action." It is more logical and more practically useful to express this idea in its simplest form, that is, as made up of space and time. This has been done by "Barfleur," and he has termed the two qualities "Space Capacity" and "Time Capacity."

20,000 Regular French troops out of a total of 187,000, together with a large force of Militia, were employed on coast defence. The mobilisation of these Militia troops had a most injurious effect on the harvest.

d. In former times accurate and early information as to proposed invasions of this country was always attainable, largely owing to the necessity of massing troops in a suitable place; and owing to railways this condition no longer holds.

6. *Conscript Armies.*

The adoption of the principle of a National Army by all the Continental Powers and by Japan has so altered the proportion between our available field army and that of possible opponents as to entirely discount the value of any military assistance we could lend to an ally. This is of great importance in view of the well-known British policy of preserving the balance of power. This implies that our weight will always be thrown against the preponderating Continental Power at the moment. The result of this military weakness is that friendly neutrals and potential allies are liable to be forced into hostilities against us, failing adequate military assistance to enable them to make head against their great military neighbour. Many examples of this tendency exist. Portugal in 1762 would certainly have been obliged by Spain to take up arms against us, failing the troops sent to her aid under Tyrawley. There are persons who think that in the event of hostilities with Germany, France and perhaps Holland would be in the same situation to day.

7. *Dependence of Great Britain on Foreign Food Supply.*

It is not thought that this in any way alters the relative situation of this country. Throughout the great wars we were dependent on external commerce for means of existence, and any general stoppage of trade, such as is implied, in the failure of the food supply, would have inevitably brought this country to its knees at any time during the last 200 years. This conclusion is borne out by the report of the late Royal Commission on the subject.

8. *Electric Communications.*

It is thought that these act in two ways:—

a. Strengthening the position of the predominant sea Power in its defensive function (*i.e.*, protecting its commerce and denying the sea to its enemy).

b. Weakening it, in so far as combined naval and military over-sea expeditions are concerned. Since surprise, the most important factor in these raids, will necessarily be more difficult to attain.

9. *The Invention of the Torpedo Boat and the Submarine.*

It appears that the former favours the predominant Power. Experience has shown that torpedo craft are helpless against organised squadrons properly equipped with the necessary auxiliaries. The comparative weakness of a single ship, if sighted by a torpedo boat before sundown in fine weather, has no counterpart in the old wars, when sunset did not make a sloop any the more able to tackle a frigate.

This quality in torpedo craft is of great importance, since experience shows that trade can only be effectively attacked where it is comparatively concentrated. As many of these points of concentration are dominated by ports in English hands, comparatively few torpedo craft would be able to deny these spots to marauding cruisers.

As regards submarines, the author has not seen enough of their employment under conditions in any way resembling war to have any definite opinion about them.

On *a priori* grounds it appears that their offensive employment will depend on the success of the flotilla in mastering that of the enemy.

From this brief survey of the changes wrought by modern conditions we see that two are by far the most important:—

a. The rise of neutral maritime Powers.

b. The relative military weakness of England due to the National Armies of the Continent. Both of these are very inimical to our old and tried methods of using the command of the sea to obtain our ends.

Let us now attempt to find what modifications, if any, are desirable in our methods of obtaining and using Command of the Sea, and hence what armed forces should be provided to enable us to exert the utmost of our national power.

It is clear that war with different Powers must be waged in different ways. For example, in the event of a Russian war it is probable that owing to our geographical and naval situation our sea power would prove redundant, whereas it is at least arguable that our military weakness is such that we should be unable to develop our real national strength. In a war with Japan, on the other hand, it is likely that our naval forces would be insufficient for the task laid upon them. This is in part due to the geographic situation of Japan, and in part to the weakness of the military position at home, which must always tie a large portion of the fleet to home waters.

It is certain that one nation, among other great Powers of equal or greater potential strength, cannot provide for all *possible* eventualities. If she did, not only would economic ruin be a probable result, but she would defeat herself by raising the very bogie (viz., a coalition) that she attempted to provide against.

Armaments must therefore be determined by probabilities, and probabilities depend on policy—not our policy only, but the policy of other Powers. The most peaceful policy on the part of a Government does not justify it in reducing armaments indefinitely, since although the Government may be determined on peace at any price, yet when it comes to paying the price, the people will jib and plump for war, regardless of the sufficiency or insufficiency of the armaments.

Fortunately history shows that although the outbreak of war has often been unexpected, yet in those wars where no compromise is possible, *i.e.*, when both sides are fighting for something they hold vital; ample warning has been given, if not of the outbreak of hostilities, yet of the sources of difference that were the real cause of the war.

The organisation of armaments and the relative strength of the naval and military forces are therefore matters that entirely depend on political probabilities, and therefore concern the Government as a whole. This Government responsibility should not stop at deciding the sums to be allotted to the War Office and Admiralty respectively, but should enter into the general equipment of the two Services. For example, if the Government thought that the principal danger threatening the Empire was a war with a purely maritime Power, on equal terms in the narrow seas, on the lines of the old Dutch wars, it would be their duty to consider of what general type the ships for this purpose should be to produce the maximum fighting power at minimum expense. It is possible that they would find the largest and most powerful battleship, allied with the lightest of cruisers, most suited to this work.

If, on the other hand, they thought a war on the lines of the Seven Years' War was more probable, they would have to consider the question of providing a military striking force, the training and equipment of which would necessarily differ from that required for the home defence Militia, which is all that the first war would necessitate. Further, they would have to consider not only great fleets in the narrow seas, but also world-wide operations requiring the dispersion, and not the concentration, of force. In this case they might be led to think that a smaller class of battleship, combined with cruisers of moderate power, would best command the sea, in the sense that that command would be required to attain the end in view.

It is hoped that enough has been said to prove that neither Command of the Sea nor the use to be made of it can be profitably considered in the abstract.

Let us, then, proceed to discuss a particular case.

It is proposed to consider Germany as being the greatest military Power in Continental Europe, and we will see in what way Great Britain can obtain, and having obtained, make use of, the Command of the Sea.

War, as Napoleon said, is a question of positions.

The advantage given to this country by her geographical situation, standing as she does across the lines of sea communication of the German Empire, is often overlooked in assessing the relative maritime strength of the two nations. It will be remembered that during the maritime wars with France the chief source of English anxiety as regards invasion, commerce protection, and safety of distant possessions lay in the practical impossibility of containing the French fleets with certainty. This difficulty was entirely due to the geographic situation of the French ports and their liability to westerly gales, and it acted in two ways: directly, in that the containing squadron was often unable to maintain its position; and, indirectly, owing to the greatly increased force, that reliefs, refits, and the hazards of the sea obliged the containers to maintain, as opposed to the force of the contained.

Put France in the geographic situation of Germany, and a very slight margin of superiority of capital ships in the containing force, which can lie snug and secure in some commanding English port, will amply suffice. The invention of the torpedo has further increased the importance of this geographic situation, for since we have seen that an attitude of *laissez-faire* on the part of our capital ships, combined with moderate activity of cruisers and flotilla, will serve the main end of naval force (close the enemy's ports and contain his capital ships), it follows that the onus of first movement is thrust on to the German fleet. If our North Sea flotillas be of such strength as to overpower the hostile flotilla, no naval officer will need to be told that this first move will be a very dangerous one.

The naval force required to bring about the Command of the Sea for this particular campaign would seem to be as follows:—

Capital Ships.—Since the conditions of the campaign will entail these ships being concentrated in fleets, the greatest attainable individual power is desirable because:—

1. For the same expenditure on building and upkeep more power can be obtained in large ships than in small.
2. A numerically smaller fleet is the more easily handled.
3. History shows—and the Dutch wars are only one example of this—that where fighting alone is to be considered, big units are more efficient than small.

Thanks to the geographic position, high speed is unnecessary, and equality only need be aimed at.

A slight margin of superiority — say 15 per cent. — in numbers would suffice.

Intermediate Ships.—It does not appear that in the past speed was ever considered of much importance in these vessels, and since the conditions of their work, *i.e.*, the convoying of over-sea expeditions and the stiffening of the cruiser line, have been made easier, there does not appear to be any reason why the older and less efficient capital ships should not be used for this purpose. If steps were taken to disrate our capital ships rather more rapidly than those of our opponents, there should be no reason to build any of this class.

Cruisers.—As heretofore, the real work of sea command will fall to the cruisers, assisted in the narrow seas by the flotilla.

No better definition of a cruiser exists than that given by "Barfleur" in his book on Naval Policy: "Ships not intended for the line shall be as small as is compatible with the work to be done, but not so small that the larger ones will not in combination be a match for any ship not of the line."

Under modern conditions the second part of this definition entails three consequences:—

1. Guns must be carried which can be used effectively at fighting ranges.
2. Gun crews and the ammunition supply must be protected from shells bursting about the ship.
3. Stability: should be protected against the lighter nature of Q.F. guns, and against high-explosive direct-action shell of large calibre.

The first part of Barfleur's definition implies that the number of these guns must be very limited, and for technical reasons it is undesirable to mount more than one calibre of gun in each vessel.

To-day it appears that these conditions would be met in a ship carrying six 7·5-inch guns, with adequate speed and light side armour, of about 9,000 tons, to cost about £800,000.

After the revolutionary wars the cost of the larger class of capital ship was about £85,000, and that of a 38-gun (nominal) standard frigate about £40,000, *i.e.*, the cost of the cruiser was about 47 per cent. of the cost of a capital ship.

The ratio to-day would be exactly the same, assuming the capital ship to cost £1,700,000.

A numerous class of lighter cruiser would be required; but since under modern conditions they cannot fulfil the second qualification laid down by "Barfleur," they belong more properly to the flotilla, and correspond to the old-time sloop.

The Flotilla.—It is impossible to exaggerate the importance of the flotilla in the narrow seas, where during a great part of the year the dark hours exceed the light, and fogs are very prevalent. No freedom of action is possible without the gravest risk to the capital ships, however strong they be, if the flotilla has not mastered that of the enemy. The capital ships of the side that has the weaker flotilla will, even if superior, run such grave risks in endeavouring to make their superiority felt as to jeopardise that superiority, how great so ever it may be.

For this reason it is felt that the greatest effort of the Service (both in brains and money) should, in a war of this character, be devoted to ensuring the victory of the flotilla.

It would seem that this end would best be served by aiming at equality of instruments in superior numbers rather than in an attempt to outdo the enemy in the strength of individual units, which can only lead, in a vicious circle, to the production of vessels, which, from their size and cost, are unsuited for the work required of them. The vessels of the flotilla should be no larger than is necessary to enable them to withstand the sea conditions prevailing in the theatre of war, and to mount an armament and possess a speed equal to the vessels of the enemy.

It is hoped that it is now clear that so far as war with Germany is concerned, very great reductions can be made in our present relative naval strength, consistently with obtaining and keeping that form of Command of the Sea which has for its object control of the enemy's sea communications and attacks on his outlying territory.

It remains to be considered whether this form of sea command will attain its object, *i.e.*, forcing the adversary to make peace.

It is here that the evil influence of railways and of neutral maritime Powers makes itself felt: the first in reducing the pressure of sea power; the second in modifying the measures which the preponderant sea Power can take against its adversary, without, as in 1812, bringing neutrals into the field.

Opinion will, of course, differ as to the extent that these factors have changed the situation. It is the opinion of many persons competent to form a judgment that no decisive result could be obtained against a nation like Germany within reasonable time; by which is meant before the exasperation of neutrals became so great as to lead to intervention in some form. We may be sure that since sea power will have caused the injury, it is against sea power that intervention will be directed.

Another point that deserves close consideration is the position of weaker Continental States. The maritime situation of this country would be much changed for the worse were the great power of the German Army used to force France and Holland into a coalition against us. To some this may seem a chimera; but history shows analagous cases: that of Portugal in 1763 has been quoted, and military autocracies—Germany in war is no less—do not stand on ceremony when fighting for vital interests.

The trend of modern opinion is in favour of the direct application of armed force to attain one's end, as opposed to such indirect methods as laying waste your opponent's country. Now, sea power, in so far as it depends on the destruction of the enemy's sea communication, is merely another form of the barbarous plan of burning the enemy's barns and hayricks. The progress of thought in the future as in the past must be expected to still further weaken this form of sea command as a national weapon, and we shall be compelled to turn more and more to direct means of attaining our ends.

We are thus forced to conclude that in a conflict with Germany, what England requires is a Navy such as shall enable her to take full advantage of her favourable geographic situation, and which, thanks to that situation, need only slightly exceed that of her enemy. This Navy to be backed up by a

National Army not necessarily equal to, but comparable with, the Continental armies—such an army, in fact, as the elder Pitt wielded during the Seven Years' War, brought up to modern standards.

With such an army no fear need be entertained of neutral States being forced to take up arms against us and so weakening our maritime position; the attempt could only recoil on the aggressor. Further, Germany, instead of standing to win all and lose nothing in an encounter with England, might be made to feel in her own person the sharp spear that sea command, with adequate military support, becomes in the hands of a great Minister.

Space will not permit of considering all possible conflicts in which this country might conceivably be engaged. The case we have taken sufficiently illustrates the idea that sea command cannot be considered in the abstract, and that to mean anything at all it must be considered in relation to other factors. Further, under modern conditions the military, as opposed to the naval, side of sea command, being more direct in its action, tends to increase in importance. Sea command is thus a state of affairs inextricably mixed with, and complicated by, other considerations germane to, but not identical with, the purely naval aspect under which it is generally considered.

It is evident that the Government alone are able to decide what particular form of sea command is necessary at any moment, and consequently they alone can determine the instruments by which this command is to be ensured. All that criticism is competent to do is to examine the adequacy or otherwise of the existing forces for some particular conflict arbitrarily chosen; and even in this it will be handicapped by ignorance of contingencies which may have influenced the Government.

It is this fact that makes the discussion of sea command, in other than particular cases, so difficult, and the conclusions reached so nebulous.

Yet it is hoped that this Essay has succeeded in establishing the truth of the definition with which it started, viz., that sea command as between two nations, the principal seats of whose power are separated by the sea, is:—

> The bringing about of such a state of affairs on the sea as will allow of one belligerent developing its full national power towards the attainment of the end for which the war is waged.

THE FORTUNE OF WAR.

By Lieut.-General H. D. HUTCHINSON, C.S.I.

Wednesday, 24th February, 1909.

General Sir W. G. NICHOLSON, G.C.B. (Chief of the General Staff), in the Chair.

> "War is a terrible thing from every aspect; but in none is it more so than in its awe-inspiring uncertainty, and the chances which affect its results."—*Lord Wolseley.*
>
> "The circumstances of greatest moment in war seem to be the numbers and bravery of the soldiers, the abilities of the commanders, and Fortune, which exerts a powerful sway over all human concerns, and especially those of war."—*Livy.*

I MUST tell you that this paper on "The Fortune of War," which I am about to read to you, is practically the same lecture which I delivered in India some eleven years ago; but it will probably be new to everyone here, and as the subject is not uninteresting, I have readily agreed, on being asked, to repeat it this afternoon.

To plunge at once *in medias res*. I suggest for your consideration the statement—and I propose to support it by some remarkable illustrations—that more strange things, incidents, coincidences—call them what you will—have happened in war, and in the lives of men whose business is war, than could be invented or imagined by anyone. But these things are, notwithstanding, true, and the effect of them on the careers of individuals, on the fate of battles, and on the fortune of States, has often been far-reaching, decisive, and indelible.

Probably everyone here this afternoon will readily admit that there *is* such a thing as fortune: and that fortune, which influences so largely, not only the actions and lives of men, but also the affairs and destinies of States and Nations, is a factor neither to be eliminated from, nor ignored in, our calculations. We do not, of course, all talk of this thing by the same name. Some of us speak of it as chance or luck, others refer to it as fate, and others, again, mention it with reverence as Providence. But call it what you will, it is certain that no person, whatever his rank, or station, or profession, can go through life without having some strange experience to relate, or some curious coincidence to recount, which has sensibly affected his own career, or that of some friend or acquaintance, which he will ascribe, according to his temperament, to fortune, or luck, or Providence, and which he can account for in no other way.

But nowhere are the freaks of fortune more noticeable than in connection with war. History teems with incidents in which great military issues have turned literally upon some lucky or unlucky stroke of fate. A great General has told us himself that in his opinion "after the finest combinations have been planned by the ablest commanders, three-fourths of the result will still depend upon chance." This is, perhaps, a somewhat sweeping assertion to make, but it is undoubtedly true that many besides Turenne have held this belief; and that many famous captains, including the great Napoleon himself, have trusted much to Fortune; while all nearly, at some time or other in their lives, have owned their indebtedness to the smiles, or have ascribed their disasters to the frowns, of the fickle goddess. It will be interesting, and not uninstructive, to note some of the more striking cases that have occurred, and we cannot begin better than by examining the careers of those famous rival leaders Napoleon and Wellington, and observing how their great destinies were affected, and, so to speak, launched into conquering grooves, by incidents or accidents which, at the time of their occurrence, could not by any possibility be supposed to have such a vital significance.

To speak of Napoleon first. In the autumn of 1793, long before ever he was known to fame, France was in a state of anarchy and rebellion. The Republican Government at Paris, styled the Convention, enforcing its cruel mandates by a reign of bloodshed and terror, was engaged in endeavouring to reduce to subjection the provinces of the south which had revolted against its authority. One of its armies had taken Marseilles, and was now marching against Toulon, which city at this time the English were helping to hold. Their fleet, under Lord Hood, being in the roadstead, their aid had been invoked by the municipal authorities, who justly dreading the vengeance of the Convention whom they had defied, had called in the foreigner to help them. In a preliminary skirmish outside Toulon, at a place called Ollioules, Dommartin, the commander of the artillery of the Convention, had been seriously wounded, and it happened that there was no one present qualified to replace him. In this emergency, an officer named Cervoni, Adjutant-General of the Republican Forces, was despatched in haste to Marseilles to try and find there someone capable of directing the artillery in the siege operations now about to be undertaken against Toulon. Fortune decreed a chance encounter in the streets of Marseilles with Captain Napoleon Buonaparte, a young artillery officer, who was then on his way from Avignon to Nice in charge of a convoy of ammunition. Cervoni was so much struck by his appearance and conversation that he decided to offer him the command of the artillery of the army of investment. The offer was accepted, with the result that within a few weeks, so wise were the counsels of Captain Buonaparte, and so vigorous his measures, the place was captured, the English withdrawing to their ships, and abandoning the city to its fate.

Thus, through what was literally a happy chance, was this young unknown captain of artillery afforded the opportunity, when he was only twenty-four years of age, of showing the stuff he was made of. His general (Dutheil[1]), writing after the fall of Toulon to the Minister for War at Paris, said: "I fail in expressions to depict the merit of Buonaparte. A great deal of science, as much intelligence, and too much bravery: such is a faint sketch of the virtues of this rare officer. It rests with you, Minister, to retain them for the glory of the Repubic."

This recommendation was not overlooked or forgotten. It ensured the honourable employment of Napoleon (who was made a general after the fall of Toulon) in the campaign of 1794, on the frontiers of Nice, in the course of which he increased his reputation, and in the spring of 1796 obtained for him the command of the Army of Italy, when he speedily brought to a close, by the victory of Montenotte, glorious to himself and to France, a war which had been wearily dragging on for nearly four years, and laid the foundation of a career which stamped him as the greatest soldier of modern times. Fourteen years later, when, as Emperor of the French nation, and Dictator of Europe, he sought in marriage the hand of an Austrian Princess, the question of his noble birth was raised; and servile genealogists, anxious to prove him worthy by descent of an alliance with the Royal house of the Hapsburgs, attempted to trace his ancestry back to an ancient line of Gothic Princes; but Napoleon himself cut short these unworthy speculations by declaring bluntly that he dated his patent of nobility from Montenotte.

It is well known that Napoleon was a great believer in fortune, and I think you will agree with me, with this instance before you, that he had some justification for his faith.

Before we proceed to speak of Wellington, we may take two more illustrations of the Fortune of War from this siege of Toulon. I have told you that when the place fell the English eventually withdrew to their ships, which were anchored in the roadstead. This was only after desperate fighting, but the capture by the Republicans of a position called from its great strength and commanding situation, Little Gibraltar, rendered further resistance useless, so they embarked on their vessels and prepared to put to sea. But this was not so easily done. A violent east wind prevailed and prevented the fleet from leaving the shelter of the port. In the meantime, where the ships were moored, they were within easy range of Little Gibraltar, and Buonaparte, seizing on the opportunity offered, hastened the construction of a heavy mortar battery, the fire from which must soon have set them ablaze and destroyed them. Eagerly was the work pressed on, but the Fortune of War decreed that neither on this occasion, nor on any other, should a British fleet fall a prize to his arms. Before the battery could be completed and armed, the wind changed, and the ships put to sea and got safely away. You see, therefore, that a simple shift of the wind made a considerable difference on this occasion.

---

[1] In a codicil to his will dated at St. Helena, in April, 1821, Napoleon bequeathed the sum of 100,000 francs to the Lieutenant of Artillery Dutheil, great nephew of his General at Toulon.

The other incident of the siege of Toulon that I would mention to you is this: The besiegers, though victorious in the end, did not by any means have it all their own way at first. The resistance was stout, and sorties by the invested garrison frequent, and the hand-to-hand fighting that ensued of the hardest. In one of these affairs, Captain Buonaparte was wounded by an English gunner, who drove a lance through his thigh, and he retained the mark of the wound all his life. When the *post-mortem* examination of his body was made at St. Helena in 1821, the traces of this wound received at Toulon were distinctly visible. But this is not what I was going to tell you. It was on another occasion, standing in a battery in which the enemy's shots were falling thickly, and in which the casualties had been very heavy indeed, Buonaparte was dictating some orders to a young sergeant who was seated on the ground writing, when a cannon ball, plunging over the parapet, pitched between them, and covered them both in a shower of earth and sand. No one was hurt, however, and the young sergeant, flicking the dirt off the paper, said: "That's all right; no need for blotting-paper here!" Buonaparte was much struck by his coolness, and inquired if he could do anything for him. "You can, indeed," was the reply; "you can change these if you like," touching his worsted shoulder cords, "into golden ones!" Needless to say, Buonaparte did not forget his comrade; the young sergeant's promotion was rapid after this, and he was known to fame in later years as Marshal Junot, Duke of Abrantès. He certainly owed something to the Fortune of War.

But if Fortune had something to say to the shaping of the career of Napoleon, her benign interposition was still more markedly exercised in the case of the Duke of Wellington. His first rude experience of war in the dreadful winter of 1794-95 in the Netherlands ended, he was ordered with his regiment, the 33rd, to join a force directed against the French Settlements in the West Indies. In the autumn of 1795 the expedition sailed, convoyed by some men-of-war under Admiral Christian, but after six weeks' buffeting by adverse winds the ships were all driven back to Portsmouth by storms and stress of weather, and the proposed operations were abandoned. A few months later, the 33rd were ordered to India, and arrived in Calcutta in February, 1797. The destination of the regiment was thus accidentally changed, and Colonel Wellesley, as he then was, found himself in the East, instead of in the West Indies; and there commenced that great and conquering career which led him eventually from victories over Mahratta hordes to triumphs over Napoleon's best Marshals, and culminated finally in glory at Waterloo, where he overthrew the great Emperor himself! Who shall say how the fate of India, of Europe, and of the world, was affected by those warring elements that drove back Admiral Christian's fleet, and defeated all its attempts to gain the shores of the West Indies?

But even when Fate had transported him to India, Colonel Wellesley on one memorable occasion did his best to escape from the country, and was certainly at the time very wrath that he did not succeed. To explain this incident, which has a strong bearing on our subject, I must remind you that in May, 1798, Napoleon led an expedition to Egypt, the avowed object of which was to conquer and colonise that country, and through this achievement, to upset English rule in India. At first, all went well. He had with him a fine fleet and some 40,000 men on transports, and was accompanied by generals like Junot, Berthier, Desaix, Kléber, Lannes, Marmont, and Murat, all destined to write glorious names for themselves in the future on the pages of history. The English fleet under Nelson, which might well have intercepted him, was driven out of his way by opportune storms. On the 12th June he captured Malta, and on the 2nd July he landed successfully at Alexandria, and a few days later, after defeating the Mamelukes in more than one fight, he established himself at Cairo. But now came news of disaster. Nelson had at last succeeded in finding the French fleet in Aboukir Bay, and on the 1st August he attacked, and destroyed it utterly. This misfortune left Napoleon in rather a tight place. His designs against India were of course crushed by the blow that had fallen, and his own safe return to Europe with his army seemed now at least problematical. For some months longer he remained uncertain in Cairo, but hearing that the Turks in Syria were preparing an army to attack him, he marched against them in February, 1799, defeated them in several engagements, and early in March approached St. Jean d'Acre, and laid siege to it. But here the Fortune of War declared against him. Admiral Sir Sidney Smith, commanding an English squadron cruising off the coast, opened fire on the French as they approached the shore, and was surprised to find his fire answered only by musketry. In a moment he divined that the French siege artillery was to come from Alexandria by sea, and very speedily he discovered and captured the ships that carried it. Without his artillery, Napoleon could effect nothing against St. Jean d'Acre, supported as it was by the English, and supplied from the sea. After wasting two whole months before the place, he abandoned the enterprise, and commenced a retreat (which was a period of horrors almost too dreadful to describe) to Cairo, which was reached about the middle of June: and on August 22nd (seeing that Egypt was played out) he sailed with two frigates for France, taking with him only Berthier, Lannes, Murat, and a few others, and arrived at Fréjus after a six weeks' voyage, during which he narrowly escaped capture by the English fleet.

Well, you will say, what has this long digression to do with Wellington? I will try to explain. On the departure of Napoleon, General Kléber was appointed to the command-in-chief of the French forces in Egypt. He was a wise and able Governor, and under him all might have gone well for the French, but most unfortunately, he was assassinated by a fanatical Arab in June of the following year (1800), and the command then devolved upon an officer called Menou, a man whose ambitious schemes, and extraordinary conduct, resolved the British Government to take effectual measures, which they had long contemplated, in alliance with Turkey, for expelling the French from the country. These measures comprised the despatch of an expedition from England under Sir Ralph Abercromby, and of an auxiliary force from India under Sir David Baird. Now, Wellington, or Colonel Wellesley, as he should still be called, fully expected to command this Indian contingent himself. It was a force which had been originally collected at Trincomalee, in Ceylon, and designed under his command to annex the island of Java; but at the last moment, in consequence of instructions from England, it was sent round by sea to Bombay, and its destination changed to Egypt. Colonel Wellesley, who had worked hard at organising and equipping it, confidently expected to proceed in command of it himself, and he was greatly disappointed, on arrival in Bombay, to learn that Sir David Baird had been appointed to the command-in-chief, while he was nominated only second-in-command of the expedition. His own brother, the Marquis of Wellesley, was at this time Governor-General of India, and he complained to him bitterly of what he described (not with justice, however, for Sir David Baird was his senior) as his unfair supersession. Notwithstanding, he would certainly have gone to Egypt as General Baird's second-in-command if he had not at this juncture fallen ill, so that he stayed behind, and it sailed without him.

Now, I think you will agree with me that fortune, or an all-wise Providence—call it what you will—had something to say to the shaping of Wellington's career about this period. It certainly was not his own fault that he did not leave India at this time, but there was other work for him to do, and the stars in their courses decreed that he should stay in the East, and "against the myriads of Assaye clash with his fiery few, and win," and so gradually build up and establish that name for intrepidity, resolution, and sagacity which marked him out later as the leader of England's armies against the hosts of France, and enabled him to triumph over them all.

It may interest you to note in this connection that a voyage from India to Egypt in sailing-ships was not in those days the simple matter that it is now in a P. and O. steamer. Sir David Baird's expedition sailed from Bombay on the 5th April, 1801, but did not succeed in reaching

Kossier, about 250 miles south of Suez, until July, 1801, after losing two transports on the way. As after this it had some 140 miles of desert to cross before striking the Nile at Thebes, and then 300 miles more to travel in boats to reach Cairo, you can understand that timelv co-operation between it, and Sir Ralph Abercromby's force, was not to be depended upon, and, as a matter of fact, the battle of Alexandria (21st March, 1801), in which the gallant Abercromby was killed, was fought and won long before Baird's contingent appeared upon the scene. Cairo, too, had surrendered to the English (21st May, 1801). But Alexandria still held out, and in the vigorous and successful operations for the reduction of this last stronghold of the French in Egypt the Indian Division took an honourable part.

I have now narrated to you some incidents in the early careers of two very famous generals, which undoubtedly had a marked effect upon their after lives and fortunes. Before I speak of strokes of fortune which have clearly decided the issue of battles or the fate of armies, I will tell you of one more famous General (though he is not, of course, to be in any sense compared either with Napoleon or with Wellington) who, commencing life in the ranks as a private soldier, finished it on a throne, and when he died, after a reign of twenty-six years, left behind him the reputation of being a wise and good king. He emphatically owed something to the Fortune of War.

The man I refer to was Bernadotte, Marshal of France, Prince of Ponte Corvo, and (as Charles XIV.) King of Sweden and Norway. Bernadotte's career was really marvellous, and assuredly he was born under a lucky star. Commencing in the humblest grade in 1780, he fought his way up to the command of a division in 1794, and ten years later gained a Marshal's bâton, while in the following year, for his distinguished share in the great victory of Austerlitz, he was created Prince of Ponte Corvo. In the next year (1806) occurred the incident which afterwards made his fortune, though no one could have guessed it at the time. In that year Napoleon at Jena and Auerstadt—both battles fought on the same day in the same neighbourhood—destroyed the military power of Prussia. At the former place he was in chief command himself; at the latter, Marshal Davoust directed the operations. The corps of Bernadotte was so disposed before the action at Auerstadt commenced, that it could have effectively co-operated with that of Davoust; but Bernadotte was jealous of Davoust, and disinclined to serve under his orders, so, relying on an ambiguous sentence in the instructions sent by the Emperor, he refused to move to his support. As it happened, the greater was the glory reaped by Davoust, for by skilful dispositions and resolute handling of his force, he won a great victory over tremendous odds. Napoleon was furious when he heard of Bernadotte's inaction. "If I was to send him to a Council of War," he said, "nothing could save him from being shot." Meantime, his corps being perfectly fresh, while all the others had lost heavily, he was despatched by the Emperor in pursuit of the flying foe, whom he overtook and defeated, first at Halle, and then, with Soult's assistance, at Lübeck. Now, Fate decreed that at the very time that Lübeck fell, some ships bringing a division of Swedish infantry, sent by Gustavus IV. to help the Prussians, should enter the port. The Swedish troops had hardly landed, when, attacked by the French and abandoned by the Prussians, they had to surrender at discretion to Bernadotte. This Marshal (Marbot tells us in his admirable memoirs) had a most engaging manner, and could be extremely pleasant if he liked. He now was at great pains to pose before his prisoners as a man of magnanimous and generous disposition. He accordingly treated the Swedish officers with great affability, granted them honourable terms of surrender, restored them their horses and baggage, provided for all their wants, and, inviting their chief, Count Mœrner, to his own quarters, overwhelmed him with kindness and attention, so that on their return to their country the Swedes were all loud in their praise of Bernadotte. All this happened in 1806. Two years later there was a revolution in Sweden. The King, Gustavus Adolphus, was compelled to abdicate, and was succeeded by his uncle, the Duke of Sudermania, who ascended the throne as Charles XIII. But he was childless, and as it was necessary to nominate some one as Crown Prince and heir to the throne, a Prince of the House of Holstein was selected for the honour. But he died suddenly in 1811, without heirs, and the Swedes had then to look abroad for some one to fill the vacant place, to which, indeed, there were many aspirants at once. At this juncture, while various claims were being canvassed, Count Mœrner proposed Bernadotte, and, mindful of his generous and humane treatment of their troops (his prisoners) in 1806 at Lübeck, the suggestion was at once welcomed by the whole nation, and finally acquiesced in by Napoleon, who, although he disliked Bernadotte personally, and had expressed his opinion of his conduct in no measured terms after Jena in 1806, and again after Wagram in 1809, yet recognised his great ability, and thought perhaps that by permitting him to occupy the throne of Sweden, he would ensure his assistance and cooperation in carrying out his own plans and designs in Europe, whatever they might be. In this view Napoleon was very much mistaken. But that is another story. It was not, however, without some difficulty that the Emperor was finally induced to approve of the nomination of Bernadotte as Crown Prince and heir to the throne. "What," said Bernadotte to him, when he still hesitated, "will you make me greater than yourself by making me *refuse* a Crown?" The sarcasm told, and Napoleon merely replied: "Go! our fates must be accomplished!" From that time Bernadotte devoted all his energies to the interests of his adopted country, which has never had cause to regret its choice. I think we may concede that the Goddess of Fortune had him under her special protection.

I may now proceed to give you some examples of battles lost, or won, through purely accidental circumstances, and these perhaps will impress you more with the large share that fortune plays in war, because the result is more directly and immediately seen. Napoleon used to say "that a battle sometimes decides everything, and sometimes the most trifling circumstance decides the fate of a battle." This is so true that hardly any battle can be examined closely—even from those Biblical days when we are told that a certain man drew a bow at a venture and smote King Ahab between the joints of his harness, down to the present time—in which fortune has not played a conspicuous part. Sometimes it is an order miscarried or misunderstood; sometimes it is the weather, an unexpected frost, or thaw, or a sudden flood in a river; sometimes it is sleep—sleep at the wrong time, *bien entendu;* sometimes it has been a question of the health of the commander on one side or the other; and sometimes it is accident pure and simple, which has affected and decided the result of a great battle or military operation. History, at all events, teems with such examples, and my only difficulty has been to make a suitable selection to put before you.

We will begin with the Waterloo campaign, because its leading incidents are familiar to everyone. It literally bristles with instances which illustrate the Fortune of War.

Napoleon's plan in this campaign was to cross the Sambre at Charleroi, and move rapidly upon Brussels, thrusting himself in between the Allies (the English and the Prussians) whom he calculated would then recoil upon their respective bases—the one to the north, the other to the east—and might then be attacked and destroyed separately. The success of this plan depended upon the secrecy of his movements, and the rapidity with which they were carried out. He left Paris himself for the front on 12th June, well neither in body nor mind. "He was fully aware," says Lord Wolseley (in his interesting book, "The Decline and Fall of Napoleon"), "that he was not now physically the man he had been in the glorious past, and his mind was full of care. A firm believer in luck, all had gone so much against him during the three previous years that he scarcely dared to trust in fortune now. 'Ah,' said he, 'you do not know what a force good luck is! It alone imparts courage! It is the feeling that fortune is with us that gives us the hardihood to dare. Not to dare is to do nothing of moment, and one never dares except as the result of good luck. Misfortune depresses and blights the soul, and thenceforward one does nothing good.'" At some time or other in our lives, I expect all of us have realised what truth there is in these sentiments.

By the 14th June, his army was assembled within a short march of Charleroi, where Zieten with 32,000 Prussians blocked the way. The Emperor's orders, issued from Beaumont (see map) now were to move to the attack at 3 a.m. on the 15th, the object being to sweep Zieten out of his path before he could be reinforced, and *by the same evening* to occupy Quatre Bras and Sombref, before the Allies could join their forces on this line to oppose him. But now occurred an accident which frustrated the complete execution of this plan, and had, in fact, a vital bearing upon the issue of the campaign. The corps of Vandamme lay in front of the central column, and it should, of course, have been the first to start. But Vandamme received no orders! Why? Because on the evening of the 14th he could not be found! He had gone off to sleep at a house some distance from his corps, and had not left his address! The orderly officer who wandered about during the night endeavouring to find him, eventually fell from his horse, and broke his leg. He lay helpless for some time, and thus the order was never delivered to Vandamme, whose division consequently remained tranquilly in bivouac until Lobau's corps, which had started at 4 a.m., came up from behind, when the state of things was with difficulty explained. Napoleon himself called this incident a "*funeste contretemps.*" It caused a delay at least of four or five hours on the 15th, at a time when minutes even were precious, and you can believe of what inestimable value this respite was to the Allies, who were, in fact, somewhat taken by surprise by Napoleon's sudden irruption, and were not yet by any means prepared to meet him.

But it was on the next day, the 16th June, that one of the most extraordinary illustrations of the Fortune of War occurred that history records—an incident so remarkable that no one could possibly have contrived it, and the effects of which practically decided the issue of *two* pitched battles, and, it is hardly too much to say, the fate of the campaign. To understand clearly what happened I must briefly explain to you the situation on the 16th. The English Army, under the Duke of Wellington, was on the morning of this day engaged in concentrating on Quatre Bras. The Prussians, under Marshal Blücher, had asembled three out of their four corps (totalling 83,000 men) at Ligny, where they were drawn out in battle array, ready to fight if attacked; and the French, divided now into two armies—one of 47,000 men, under Ney, and one of 73,000, under the Emperor himself—were preparing to assault the Allies in the two positions indicated. Now, several orders were sent from Napoleon to Ney on the 16th, but as the hours passed on, and more was known of the position and strength of the Allies, it was finally arranged that Ney should drive the English out of Quatre Bras and then detach one of his corps to fall upon the Prussian right flank, ascertained to be posted about Brye and St. Amand. As soon as this flank attack was developed, the Emperor would himself strike hard in front, and the result should be the defeat and destruction of the Prussian Army. But everything went wrong on this eventful day.

In the first place, although time was so precious, seven or eight hours of daylight were unaccountably wasted by Napoleon himself on the morning of the 16th,[1] and it was eleven o'clock a.m. before Ney, who was at Frasnes, received any orders at all; and as his own columns were not even then closed up (and it was entirely his own fault that they were not), it was 2 p.m. before he commenced his attack on Quatre Bras. This delay was fatal. Not only did it give time to the Prussians at Ligny to complete all their preparations for a desperate defence, but, what was far more serious (for the French!) it enabled the British, hurrying up from all quarters, to establish themselves in such strength at Quatre Bras that when at last Ney did attack that position, far from being able to get possession of it easily, as he and Napoleon had anticipated, he met with such a determined resistance that he found himself quite unable to make any detachment for the attack upon the Prussian right flank, which had been ordered, and which was now anxiously expected by the Emperor.

However, tired of waiting for Ney's co-operation, Napoleon, at about 3 p.m., launched his own columns to the attack of the Prussian position at Ligny. The fighting that ensued was of the most desperate nature, and the Emperor very soon realised that instead of the 40,000 men which in the morning he had estimated to be opposed to him, something like double that number had to be reckoned with. Consequently he became more anxious than ever about Ney's support, and sent him from the battle-field an urgent despatch, in which the following passage occurs: "Manœuvre at once to envelop the enemy's right, and fall with might and main upon his rear. His army is lost if you act with vigour. The fate of France is in your hands. Therefore, lose not an instant in making the prescribed movement but march direct on the heights of Brye and St. Amand, and contribute to a victory which perhaps will be decisive."

Now, mark how from the moment these lines were penned, Dame Fortune interposed her pleasure, and took the management of affairs into her own hands. The aide-de-camp who carried this despatch to Ney, happened on his way to pass the head of D'Erlon's corps (part of Ney's command), and showed it to Durutte, who commanded its leading division, and on his own responsibility ordered him to turn off at once to his right, and direct his march on Brye. This order Durutte obeyed. A little farther on the aide-de-camp overtook D'Erlon himself, who, with his staff, was riding in advance of his corps. He, on learning what had passed, at once rode off to join his command, sending an officer to inform Ney, and pressed the march on Brye, believing that in doing so he was only anticipating orders from Ney. About half-past five in the afternoon his corps was observed approaching the battle-field of Ligny, *but not from the direction in which it was expected.* Now, at this very moment the Emperor had set his reserve in motion, the Imperial Guard, with the intention of deciding the struggle that was raging in his front. But, as luck would have it, D'Erlon's corps, when first seen, was mistaken for the enemy, and the Guard was halted while a reconnaissance was made to ascertain the facts. In two hours' time, word was brought back that the troops seen were D'Erlon's corps, and not an enemy. The arrested movement was then continued at 7.30, with the result that the Prussian centre was pierced and their army driven from the field. But the two hours lost by this contretemps made just this difference, that the battle, instead of being over at 7.30 in the evening, was not ended until 9.30, when night had set in, and darkness coming on, stopped pursuit, and prevented Napoleon from completing his victory, as he otherwise assuredly would have done.

---

[1] "Had Napoleon set his troops in motion at 5 or even 6 a.m. on the 16th, the result of the day's fighting must have been very different. At a time when every hour was worth a reinforcement of 10,000 men, he allowed at least seven hours of daylight to slip by to no purpose."—"Decline and Fall of Napoleon."—*Wolseley.*

In the meantime, Ney, hearing of D'Erlon's movements, hotly pressed by Wellington, and stung by his own unexpected repulse, peremptorily ordered him back again, so that the strange spectacle was afforded of a Marshal of France, with 20,000 men, receiving such contradictory orders that he spent the whole of this eventful day in marching backwards and forwards between the contending armies at Ligny and Quatre Bras, without ever getting near enough to be of material assistance to either of them! For before he could return to Quatre Bras to support Ney, the Duke, who by nightfall had about 30,000 men on the ground, against about 21,000 with Ney, had assumed the offensive all along the line, and had driven the French back as far as Frasnes, where he left them for the night, while his own troops bivouacked on the field which they had so bravely maintained.

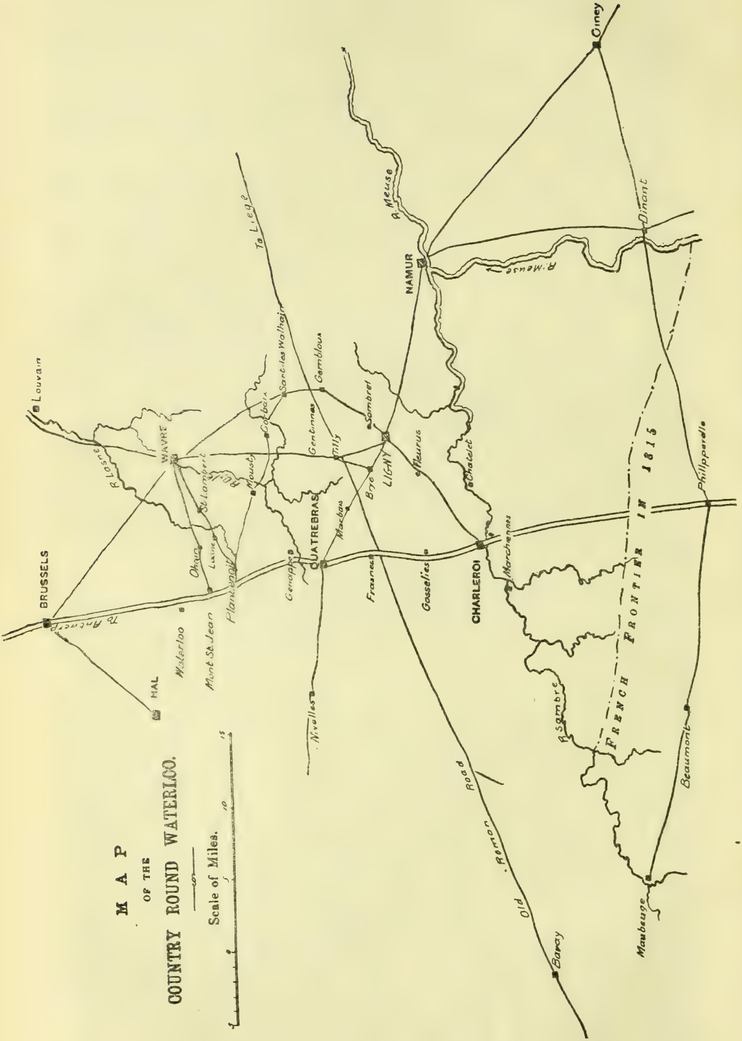
I think, if you have followed me in this description, you will agree that it was a most extraordinary freak of fortune that produced such remarkable results. They say that "Providence is always on the side of the big battalions" but most assuredly this was an exception to the general rule. Napoleon had "the big battalions" on the 16th June, but fortune was certainly not on his side, and a chain of untoward circumstances deprived him of his numerical superiority at a critical moment in *both* the battles fought by him on this day, with the consequence that he was beaten in one, and though victorious in the other, he was unable, through the lateness of the hour at which victory was achieved, to reap any fruit from his success.

On the other hand, says an able and well-known critic (Ropes), "it cannot be seriously questioned that the result of the action at Quatre Bras would have been a victory for the French if D'Erlon's corps had not been taken away from Ney. It fact, one may safely conclude that the battle of Waterloo would not have been fought at all, had this corps not been turned aside by the unauthorised act of a staff officer, because," he goes on to say, "it is altogether improbable that if Blücher had found that Wellington was in no condition to receive battle on the 18th, he would have deviated, after losing the battle at Ligny, from his natural course, which was to fall back on Liège or Namur."

However, interesting as these speculations may be, they are outside the scope of our subject, which is only to show what a large share was played by fortune in the operations of this eventful day.

I said a short time ago that sleep—that is, sleep at the wrong time—might affect the issue of a battle. An instance of this, too, occurred in connection with this memorable 16th June. I mentioned that at Ligny, Blücher had assembled three out of the four corps which constituted his army. The fourth corps, Bulow's, which was at Liège when the alarm was first given, did not get up in time for the fight as it certainly might have done. Why? Because no one dared to wake Blücher, who happened to be fast asleep when Gneisenau, the chief of the Prussian Staff, was sending out orders on the 14th June for the concentration at Ligny. Gneisenau was junior to Bulow, and so great was the respect for seniority in the Prussian Army in those days that he couched his instructions rather in the form of a request than of an order, with the consequence that Bulow, not realising that collision with the enemy was so imminent, postponed his start for twenty-four hours after receiving the despatch, and arrived too late to take any share in the battle of Ligny, the issue of which might have been very different if another 30,000 Prussians had been on the ground.

But the fiery and impetuous Blücher was not the only commander who was asleep at the wrong time during this momentous campaign. I have told you how Napoleon was ill in mind and body at this time. He was no longer the Napoleon of Marengo or of Austerlitz. He had grown fat, he ate more, he slept longer, and he rode less. Further, a painful malady, from which he had been a long time a sufferer, now attacked him oftener and with greater virulence. At such times "he had great difficulty in keeping awake, and when under its influence his drawn features bespoke both physical pain and mental depression." After Ligny he was so prostrated by the exertions and anxieties of the day that he went to bed at once, in an exhausted condition, without issuing any directions for the night or for the morrow. Grouchy wished to follow up the beaten Prussians at once, but no one dared to awaken the Emperor to ask for orders, so nothing was done. The next morning it was the same; his lethargic mood continued. He would see no one until 8 a.m., and even then it was impossible to elicit definite instructions from him. Consequently, both wings of the French army spent the precious early hours of the 17th in inactivity, while the Allies slipped away in safety, almost unmolested, and approached each other with deep design, confident now of being able to unite their forces and to confront the invader at last with every chance of beating him.


MAP
OF THE
COUNTRY ROUND WATERLOO.
Scale of Miles.
5
10
15
BRUSSELS
To Antwerp
HAL
Waterloo
Mont St. Jean
Ohain
Lasne
Planchenoit
St. Lambert
WAVRE
R. Lasne
Louvain
R. Dyle
Mousty
Corbais
Sart-les Walhain
To Liege
Gembloux
Gentinnes
Tilly
Sombref
LIGNY
Brye
Marbais
QUATREBRAS
Genappe
Nivelles
Frasnes
Gosselies
Fleurus
Chatelet
CHARLEROI
Marchiennes
NAMUR
R. Meuse
R. Meuse
Dinant
Ciney
Philippeville
Beaumont
Maubeuge
R. Sambre
FRENCH FRONTIER IN 1815
Old Roman Road
Bavay

Well may Vandamme have said to those around him: "The Napoleon whom we have known exists no more! Our success of yesterday will have no result!" Lord Wolseley declares in so many words that he believes the state of the Emperor's health to have been the primary cause of his final overthrow at Waterloo. He says: "I believe it was not so much the deep condition of the country after the heavy rain as a recurrence of this fatal malady on the morning of Waterloo, added, of course, to the fact that he did not expect Blücher's arrival on the field of battle that day, which caused him to begin the action so late, and so throw away, without purpose, hours which might have been employed in destroying Wellington before the Prussians could arrive. We know that during the progress of the battle itself he remained for hours seated motionless at a table placed for him in the open, often asleep, with his head resting on his arms; also, that when flying beaten from the field he suffered so much from drowsiness, it was with difficulty his attendants prevented him from tumbling from his horse. The more (he concludes) I study his grandly conceived plan of campaign for 1815, the more convinced I am that the overwhelming defeat in which it ended was primarily the result of bodily disease, and the failure of mental power which resulted from it at supreme moments when rapid and energetic decision was imperatively necessary for success."

Napoleon himself used to say: "*Health is indispensable for war, and nothing can replace it.*" It was the Fortune of War that in this last great struggle in which he was engaged, on which the fate of Europe, of the civilised world depended, the state of his own health should have been such a weighty factor in the scale against him.

I have shown you now how in the course of only two or three days many all-important issues were affected and decided by such apparently trivial incidents as an accident to a messenger, an order misdelivered or badly expressed, or by the fact of a commander being inaccessible because he was asleep, or unfit for work because he was ill. I might add to these examples of the Fortune of War in this campaign yet another, showing that even in the matter of the weather the fates were against Napoleon. Between two o'clock in the afternoon of the 17th, and up to about six on the morning of the 18th, the rain descended in torrents, and put the whole country under water; and, despite what Lord Wolseley has written (which I have just told you), there is plenty of evidence to show that one chief reason why the attack on the English position, which would have had a much greater chance of success had it been commenced at six in the morning, was postponed until nearly midday, was that the ground was so soft and sticky that it was difficult to manœuvre on it until the water had drained off. This long delay was, of course, of inestimable value in allowing the Prussians to arrive to take their pre-arranged share in the battle.

I must not tax your patience much longer. Had time permitted I should like to have told you how sudden floods in rivers have contributed to victories and defeats, of which there were memorable instances in Spain in 1808, at Aspern and Essling in 1809, and in Silesia in 1813. In the first of these cases, a flood in the river Esla, which rendered it unfordable for twenty-four hours, was probably the salvation of Sir John Moore's army at the time.

I might also have given you, had time afforded, examples of the effect of sudden frosts, or sudden thaws, on the fortunes of an army. For instance, you would hardly believe, perhaps, that a fleet of ships could be captured by a charge of cavalry! Sir Evelyn Wood has not included the story, at all events, in his very interesting work, "The Achievements of Cavalry," which I cordially recommend you all to read. Yet it is a fact. It happened in 1794, when a French army, under General Pichegru, was engaged in the conquest of Holland. The winter of that year was the severest that had been known for a century past, and Alison writes: "To complete the wonders of this campaign, a body of cavalry and flying artillery crossed the Zuyder Zee on the ice, and summoned the Dutch fleet lying frozen up at the Texel. The commanders, confounded at the hardihood of the enterprise, surrendered their ships to this novel species of assailants!"

On the other hand, a sudden thaw has sometimes been as unfortunate for an army as a sudden frost. You have all no doubt read of the dreadful retreat from Moscow in the winter of 1812, and of the terrible sufferings of Napoleon's army amid the Russian frosts and snows. These fearful horrors culminated when the Beresina was reached, an unfordable river, across which the only bridge had been destroyed. "Never," said Napoleon, "was I placed in such a desperate situation. Pressed on all sides, I found my further progress barred by a river difficult to cross and defended by an entire army. My task was, with soldiers half dead from cold and hunger, to conquer obstacles which would have terrified the best organised army. Fortune seemed to take pleasure in heaping horrors upon us during this fatal retreat. The severe cold which had come on just before we reached Smolensko had about the time we quitted Krasnoi yielded to a milder temperature, and the ice on the Beresina was broken up. This was a double misfortune. The Beresina, had it been frozen hard would have permitted us to cross *en masse* and crush the army of Tchichagof; but, on the contrary, filled with drifting blocks of ice, the construction of bridges was greatly impeded, and the floating masses, coming down with violence, endangered the bridges when established."

You see, therefore, that this was an occasion when an unexpected thaw was the most unfortunate thing that could have happened; and history teems with similar instances. But I have detained you already too long, and will therefore mention only one more, which shall be the last. It is an example of the winds and the waves fighting in our favour, as they have done on more than one fateful occasion.

In December, 1796, the French sent an expedition to Ireland. It consisted of seventeen sail of the line, thirteen frigates, and numerous transports which carried some 25,000 men, destined to land in Bantry Bay and co-operate with the Irish malcontents of the day, whose ardour, stimulated by the success of the French Revolution, led them to hope that the time was ripe for breaking off all connection with England and setting up a Republic of their own on the model of France. However, from the moment of leaving harbour (Brest) nothing but disasters were encountered. Violent tempests prevailed throughout the time the ships were at sea. After losing one battle-ship and several transports, a battered remnant, after eight days' struggling reached the appointed rendezvous; but amongst others, the frigate conveying General Hoche, the commander of the expedition, was driven off her course, and did not arrive at all. On board this frigate was not only the Commander-in-Chief, but also the field artillery of the expedition, and the treasure for its expenses. The second-in-command, Admiral Bouvet, did not, in the circumstances, venture to attempt a landing. He waited for some days, and then decided they should make the best of their way back to France. This they did eventually, but not without losing several more ships. Hoche himself, after escaping from a thousand perils, got back to France too; and that was the end of this expedition, of which it was said at the time that "the goodness of Providence to us has exhibited a second Armada," and of which it was written once more: "*Efflavit Deus, et dissipantur.*"

In conclusion, it only remains to ask if any useful lesson is to be learned from these experiences of the past? I think we may answer "Yes." And the lesson is, that, recognising the fact that the future, where the operations of war are concerned, must always be full of "precious possibilities," it behoves each and all of us, in our respective stations, to fit ourselves by reading, by reflection, by observation, and by practical training of every kind that we can arrange, to take advantage of, and to profit by, the gifts of Fortune when she offers them to us; and on the other hand, to endeavour to maintain ourselves bravely, and to try to do the thing that is right, when she averts her face, and the circumstances are adverse and difficult. To trust blindly in Fortune is, of course, as foolish a mistake as to ignore her existence altogether. "Fortune," said the great Emperor who trusted in the fickle goddess not a little, "Fortune is a woman. Avail yourself of her favour while she is in the humour, and beware that she does not change through resentment at your neglect." That, I think, is sound advice: avail yourself of her favours when she smiles, and do your best to conciliate her when she frowns; be prepared for either event; and remember always that—

"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune;
Omitted, all the voyage of life
Is bound in shallows and in miseries."

Captain A. F. Becke, late R.F.A. :—As I understand the lecturer, he has taken three very different kinds of phenomena—to wit, psychic, material, and cosmic—and grouping them arbitrarily together he appears to deplore that no general can really control all three. Of course, the weather is beyond the control of man, and was even outside Napoleon's control; only the legendary Joshua was able to stop the sun, but Napoleon lacked this power, or it would have fared badly for Wellington on the evening of 17th June, 1815, when the Emperor reached Rossomme. Doubtless because Napoleon had not taken so much care as usual in 1815 to eliminate Fortune from the game, she played her part of the hand—the weather—against him. For surely it was leaving too much to Fate to take the field with such wing commanders as Ney and Grouchy, when Davout and Murat were available. However, it will repay us best to consider what means Napoleon introduced to eliminate Fortune so far as he could. And the system he gradually evolved—he first used it in 1806—was " the battalion square " formation for the advance. Now at last Fortune's caprices were nullified, and all small mistakes and errors made in the Grand Army practically cancelled one another; and the system ensured that once the enemy's main army was encountered it was held fast whilst the Emperor proceeded to revolve his masses around the fixed point, and thus concentrate superior numbers at the right time and place, thereby placing himself in a position to deal the knock-out blow. And if we are to understand this campaign of 1815 aright we must study it again, and apply this doctrine to it. Then, and then alone, shall we understand how Napoleon dealt with what he understood so well —the Fortune of War. For the chance came in this campaign on 17th June for Ney to hold Wellington fast early in the morning, and leave the Anglo-Dutch left open to the blow of Napoleon's masses. With Blücher out of the game for the day, the result would not have been in doubt for a moment, and then we should all have better understood the relative importance of what are at best but incidents in the campaign : the accident to Vandamme's orderly (other orderlies in other campaigns had failed to arrive), the wanderings of D'Erlon on 16th June (other corps in other campaigns had missed the decisive field), and last but not least, the " sleeping sickness " from which some people still think that Napoleon suffered in 1815, for these legends die hard. Let us briefly consider one or two of these points. Napoleon knew all about " the Fortune of War," and by advancing in "battalion square" did control Fortune so far as was humanly possible. As Colonel Maude explained to us in this very theatre fourteen months ago, this system was devised to render the French Army, the Grand Army, to use that lecturer's own expressive words, "fool proof"; in other words, to eliminate Fortune. In the campaign of 1815 the lecturer to-day makes too much of the incident with regard to Vandamme, for it appears to me to be exactly described by Napoleon when he called it "an unfortunate incident," and not a fatal mistake or fatal happening. Napoleon's system of strategy was especially introduced to annul such incidents, and as a matter of fact, I believe all writers agree that Napoleon on the 16th of June had the game entirely in his own hands (which shows the small value of this incident), and he also had the campaign in hand on the 17th of June; and if Ney had at once, on that day, taken up the duty of "general advanced guard," the Marshal would have fixed Wellington at Quatre Bras, and allowed Napoleon to swing in his masses and deal the decisive stroke on the 17th of June, and then there would have been no Waterloo at all, and we should have heard less of the Emperor's lethargy, and the big storm would have come too late to save Wellington.

We have had a very dismal picture drawn for us of Napoleon in this Waterloo campaign. It is, of course, very hard to understand the campaign if one assumes that Napoleon, the embodiment of energy and mobility, still retained all his old powers. But as a matter of fact, he did put in a really marvellous performance. With regard to his sleeping, on which so much stress has been laid, the Emperor actually did sleep only twenty hours out of the ninety-six which the campaign lasted, and all the facts prove that he was actually in the saddle over thirty hours. That is hardly the performance of a physically broken-down man. Again, with regard to his sleeping during the Battle of Waterloo, I have read a great deal about Waterloo, but I have never found a single writer who could prove, or who attempted to prove, that Napoleon slept at a *critical* hour in that battle. Also, other generals have slept in other battles. I believe Wellington slept at Salamanca, but was it not a British victory; and Napoleon certainly slept at Jena and at Wagram, and were they not French victories? If Napoleon did not sleep at a critical hour at Waterloo, it mattered little, for he was wisely resting the brain, which always excels after rest. Further, all that this incident would prove is that Napoleon in 1815 no longer possessed his former limitless powers of endurance, and that he really lacked his former exuberant energy. As for his belief in Fortune, I found two remarks of his in a book which I happened to be reading some time ago, and they run as follows: "If you let Fortune slip to-day you must not expect to find her again to-morrow." And the other saying was (they are both said to have been uttered in 1796): "Fortune is a woman; the more she gives me the more I will demand of her." That appears to me to show the trend of his mind, and that his attitude was not one of merely blind superstition, but the result of a well-balanced and deeply-calculating mind; and it was calculation that led him to the evolution of "the battalion square" to ensure the elimination of Fortune, and the nullifying of her shafts in every single way. The "battalion square" is not just a theory which a few faddists in England and the French General Staff subscribe to, but it is based on facts which are to be found in the *Correspondance,* and in the documents of no campaign is it made so clear as it is in the letters which deal with this Waterloo campaign; and the idea may be found quite clearly stated in the letter to Ney written on the 16th June, 1815, from Charleroi.

The CHAIRMAN (General Sir W. Nicholson):—I have a very few words to say about General Hutchinson's admirable lecture. In the first place, I think that General Hutchinson has attached rather too great importance to Luck and Fortune and Fate and too little importance to our own efforts to take advantage of Luck, and to repel the adverse strokes of Fortune. As regards Fate, which is a most powerful agency, I think the less we say about it the better, but simply touch wood and whisper: "*Unberufen.*" With regard to the question of Luck, the whole essence of luck was summed up about twenty centuries ago by a Latin poet in very succinct terms. Ovid said:

> "Casus ubique valet. Semper tibi pendeat hamus;
> Quo minime credas gurgite, piscis erit,"

which, translated, is: "Luck or chance is strong everywhere. Therefore always have your hook ready, and in that eddy where you least expect it, you will catch your fish." That is practically the essence of luck or chance. Luck or chance is common, and is strong everywhere; therefore it is the duty of everybody, and especially the duty of officers in the Army, by study and by the development of their physical and moral qualities, to be ready to take advantage of the many opportunities which occur to everybody in his military career sooner or later. Then the Romans separated fortune from luck. Fortune they regarded as an attractive goddess, who bestowed her favours capriciously on her worshippers. There was another Latin poet who summed up the whole essence of fortune in two lines; I mean Juvenal, who said:

> " Nullum numen habes, si sit prudentia. Nos te,
> Nos facimus Fortuna deam, caeloque locamus,"

which, translated, means: " Thou wouldst have no divinity, oh Fortune, if we only possessed foresight. It is we, by our lack of foresight, that convert thee into a goddess and exalt thee to the skies." In other words, if we possess prudence and foresight in our campaigns and the ordinary affairs of life, according to Juvenal, Fortune will smile upon us. In reading the various illustrations given by General Hutchinson, I do not think, if I may venture to say so, it was the Fortune of War that made Vandamme go and sleep in some place where he could not be found; I think it was his own carelessness. I think it was his own carelessness that he did not leave a suitable staff officer to say where he was to be found. I admit that sleep is very attractive to everybody, and the mind is perhaps more active after sleep than before sleep; but still, if events are happening in the battlefield or otherwise, surely the Commander-in-Chief should have some responsible chief of the staff or other staff officer and say to him: "I am going to sleep for three or four hours; I will tell you my plan of action, and I authorise you to give the various orders that may be necessary." If the command is so absolutely concentrated that when a Commander is asleep nobody else can give the orders, all I can say is I do not think that army is well commanded or its staff well organised. About Fate I fear to speak, because it is too serious a subject, but I have spoken of Luck and Fortune. As regards the crowning victory which might have been won by Napoleon if his health had been as good at it was before, if all his plans before and during the Battle of Waterloo had succeeded, if that thunder storm had not taken place—well, I am content to leave that to the judgment of mankind, and especially to the common-sense of the British nation, which has a proverb that " The proof of the pudding is in the eating." The only other task I have to perform is to ask you to give a most cordial vote of thanks to General Hutchinson for his most admirable lecture.

Colonel LONSDALE-HALE:—As the oldest member of the Council present, it is my pleasant duty to ask you to accord a hearty vote of thanks to the Chief of the General Staff, General Sir William Nicholson, for his presence here to-day. Some of you gentlemen know how onerous the duties of the Chief of the General Staff are, and there is no doubt that General Nicholson in so kindly coming here to-day has shown that he takes a very great interest in the Institution. I have been the Chairman of the Library and JOURNAL Committee of this Institution for I do not know how many years, and I have seen the different ways of working with the War Office and the Admiralty, and, Sir William, owing to the way the War Office meet us and the way they help us in every possible manner, both in the JOURNAL and elsewhere, and the valuable assistance we receive from your representative, Colonel Haldane, this Institution benefits immensely by the kindly and friendly relations which the War Office now allows us to hold with them. I assure you, Sir, that we greatly appreciate your kindness in coming here to-day, and thank you heartily for so doing.

THE COMMUNICATIONS OF A DIVISION IN THE FIELD.

Notes of a Lecture Delivered in March, 1909, by Colonel F. J. DAVIES, C.B., General Staff, 1st Division.

1. Means of Communication.

EXCLUSIVE of Staff officers, there are three means by which communication is maintained between the units of a division. They are:—

1. The wire (telegraph or telephone).
2. Visual signalling.
3. Orderlies, foot, mounted or cyclist.

To maintain communication by these means is the duty of the divisional communication company. I may as well say here that, as will appear later on, the name "Communication Company," so far as the present temporary organisation is concerned, is somewhat misleading, since the four sections composing it are never brought together as a company, nor do they ever work together under one man's control. If, as is to be hoped, the communication troops are eventually put on a permanent basis, the company organisation will probably be adopted.

Now, each of these three means of communication has its possibilities, its limitations and its peculiarities, all of which must be taken into account in determining the principles on which its use is to be based.

(1) *The Wire.*

With the wire, the running end—that is, the end which is sent out to form the advanced office—must originally start from the place where the standing end is, namely, the base office. Similarly, unless special arrangements are made, the running end must return to the base office in the process of rolling up. You cannot reel up a cable as you do a salmon line, so unless another wagon or pack animal, as the case may be, is available, the vehicle which laid the cable must in reeling up return by the road it came.

For this reason the operators at the distant office are always found by the unit which finds the base office; as a matter of fact they accompany the wagon or mule as it lays the cable. No other method is possible. Responsibility for establishing communication by wire, therefore, rests solely with the unit to which the wire belongs.

It is necessary, too, that the direction in which the cables are to be run out, *i.e.*, whether from the superior to the subordinate or *vice-versâ,* should be laid down. It has been decided that normally they should be laid from the superior to the subordinate; that is, they are always laid to the front, so to speak, which is the only possible arrangement if an advance is afterwards to be made. Thus the normal use of the Army cables is to connect Army Headquarters with divisions; that of the divisional cables to connect Divisional Headquarters with brigades, and so on. I say " normal " because the exigencies of the situation often demand a departure from this rule, at any rate, with the infantry and artillery telephones.

Another peculiarity of the wire is that it cannot be used unless the intervening ground is passable and secure from the enemy. Nor is it the enemy alone that we have to fear, as the cables are often broken by our own troops, especially at night. It is known, however, at once if a break occurs, so that there is never the slightest doubt as to whether a message has got through or not, as may be the case if it has been sent by orderly.

Moreover, in the case of the divisional cables, the line can usually be repaired in less time than it takes a mounted man to traverse the whole distance, as there is a mounted line man at each end. The actual repair of the cable can be done in a couple of minutes.

The wire is unaffected by obstacles to view, such as hills, trees, fog, darkness, rain or snow; it does not depend on the brightness of the sun. The telegraph or telephone operator can do his work as efficiently under cover as in the open; he does not disclose his presence to the enemy, lying as he does on the ground with the receiver strapped to his ear.

The telegraph is unquestionably both rapid and accurate; indeed the R.E. operators are so highly trained that a very high standard can be attained. The average rate is 18 words a minute, and mistakes are rare.

The telephone, if the operators are carefully trained, is second only in rapidity and accuracy to the telegraph; it is superior in both respects to visual signalling, and in rapidity, except over short distances, to the orderly. It may here be mentioned that telephone operators require very careful training. Unless a recognised system of sending and receiving is strictly adhered to, inaccuracy and loss of time will result. The system adopted is similar to that used by the Post Office.

The wire is particularly adapted to maintaining communication with a body of troops on the move. Wherever or whenever the travelling station halts, communication is at once reestablished. Indeed, with the telegraph, communication is never lost, as the operator sits on the wagon with the receiver strapped to his ear, and can be called up at any moment.

It has been said that the use of the cable tends to tie commanders down unduly to one spot. It is doubtful if this statement is correct. Indeed, it may fairly be argued that the contrary is the case. Long before anyone ever dreamed of using cables in the field we were taught that the position of headquarters must not continually be moved about; that the place to which reports are to be sent must be changed as seldom as possible, the reason being that all such changes are liable to produce disorder. Now, if the cables are skilfully laid a general can move his headquarters with much less dislocation of his communications than was the case when messages were carried by staff officers and orderlies. There is nothing to prevent a General going forward himself to reconnoitre provided he leaves a responsible officer to represent him at Divisional Headquarters.

(2) *Visual Signalling.*

In the case of visual signalling there is no necessity to send forward *personnel* to form the distant station. Each unit finds the *personnel* for its own end of the line.

There being no cable to lay, signallers are undeterred by the impassability of the ground, whether due to physical obstacles or to the presence of the enemy. On the other hand, the nature of the country may make signalling so difficult and so wasteful of *personnel* as practically to prohibit its use; or atmospheric conditions may render it impossible. In the latter case it is beyond the power of man to "repair the line." Signallers are often called upon to expose themselves, and communication will be interrupted by casualties. Indeed, the enemy's fire will often make it impossible. Again, an indiscreet signaller will give important information to the enemy by merely waving his flag or showing his light, or the enemy may read his message. During night operations visual signalling is usually out of the question.

In suitable country, skilfully handled signallers may be of great use in maintaining communication between moving bodies of troops, particularly when the situation has not developed sufficiently to justify the cables being laid out. On the other hand, if the country is unfavourable, a very short move may dislocate the signalling arrangements, which would not be the case with the cables if they are carefully laid.

(3) *Orderlies.*

The responsibility for this means of communication rests solely with the unit despatching the message.

Except over short distances, or when the message is of great length, communication by orderly is slower than by wire or by visual signalling. It is the most accurate of all means, provided the orderly reaches his destination; but many things may prevent this: he may dawdle, he may be shot, his horse may go lame, his bicycle may be broken, he may lose his way. Military history abounds with instances of disasters caused by a messenger failing to reach his destination. The worst of it is that until the orderly returns and produces the receipt you never know whether the message has got through or not.

Communication by orderly can, however, be used when other means fail. A bold and skilful messenger will make his way even through the enemy's lines when the use of the wire or of visual signalling is impossible.

Communication by orderly is wasteful of men and animals. There is no comparison between the number of hours that an operator can continually be sending messages and the number of hours that a man or a horse can continually be carrying them.

I believe, too, that it is harder to train a good orderly, who can be relied upon to carry messages with certainty under all circumstances, than to train a good operator or a good signaller.

Such are the available means of communication. It is by skilful use of these means, each in its proper sphere, using sometimes one, sometimes another, sometimes, indeed, using all three simultaneously, that an efficient system of communication is established.

II. PERSONNEL AND MATERIEL.

Divisional Headquarters.

The communication unit at Divisional Headquarters is known as the Divisional Section. Its nucleus is the Divisional Telegraph Company, to which is added *personnel* for signalling and orderly work taken from the infantry and artillery units of the division. These additional men are all mounted either on horses or on bicycles, and are all trained both as signallers and as orderlies. The number this year is sixteen. These men join the Telegraph Company early in the training season and remain with it till after manœuvres.

The telegraph portion of this section consists of three cable detachments. Each cable detachment has one cable wagon and one light spring wagon. The cable wagon carries 8 miles of cable on four drums, weighing 85 lbs. to the mile. A cable wagon can lay or take up line at from 2½ to 3½ miles an hour, and for short distances at even 8 to 10 miles an hour. Two additional miles of cable are carried in the light spring wagon, which also carries the rations, etc., of the detachment, there being no second line transport. Each cable detachment can establish three telegraph offices, namely, a base office, an intermediate office, which can be tapped in at any point in the line, and a travelling office. The total length of wire carried by the three detachments is 30 miles.

It has been proposed to give each cable detachment an additional reel of light cable, which can be run out by hand, so that communication can be kept up even if the ground is impassable to wheels.

The section is commanded and trained by the R.E. officer in command of the Telegraph Company. This is a great advance on the old system, under which the R.E. officer controlled the telegraphs, the divisional signalling officer the signallers, and the staff the orderlies; now they are all commanded and trained by one man.

The cables of this section can be used either as telegraphs or as telephones, there being a telephone attached to each telegraph instrument. The telegraph should always be used for sending orders and reports. The use of the telephone should be restricted to occasions when the G.O.C. or his General Staff officer wish to discuss the situation personally with a subordinate commander.

The cables of this section are used for communication with the subordinate units of the division; the signallers form stations for communicating with subordinate units and with other divisions, etc., as may be necessary; all messages sent by orderly are carried by men of the section.

Infantry Brigades.

A communication section is formed in each infantry brigade, the *personnel* being taken entirely from the battalions of the brigade. It is commanded and trained by an officer of the brigade, selected by the brigade commander, and designated the "Brigade Communication Officer." The responsibility for training a brigade section rests entirely with the brigadier.

Each brigade section has two telephone detachments. A telephone detachment consists of one non-commissioned officer and five men, and is provided with three miles of cable, carried by a pack animal on six drums, and four portable telephones, which can also be used as buzzers, carried by the men. Each detachment has one driver, who is also trained in telephone duties.

One of the pack animals carries a commutator for use at the base office, by means of which one telephone instrument can be connected to several lines.

By using a pack animal instead of a wheeled vehicle, the line can be laid wherever a man can crawl. For signalling and orderly work there are one non-commissioned officer and eight men mounted on bicycles. A light cart is provided which carries spare stores, including two miles of cable, as well as the rations, etc., of the detachment. Thus the total amount of wire carried by an infantry brigade is eight miles. It weighs 20 lbs. to the mile.

The telephones are used normally for establishing communication between brigade headquarters and the battalions of the brigade; the signallers form stations for communicating with the battalions of the brigade, with other units of the division, and with divisional headquarters; the orderlies carry all messages emanating from brigade headquarters.

Artillery.

Each artillery brigade is provided with a cable cart carrying four miles of cable weighing 40 lbs. to the mile, and has six portable telephones.

Each battery has 1,080 yards of light cable, carried by two mounted men, each of whom carries a telephone instrument.

The Totals for a Division are :—

Unit.	*Cable (in miles).*	*Instrum'ts.*
Divisional Headquarters ...	30	9
3 Infantry Brigades	24	24
4 Artillery Brigades	16	24
12 Batteries	7 (about)	24
	77	81

The Divisional Communication Officer.

In addition to the officers already mentioned, there is in each division an officer of the rank of major or captain selected from one of the units of the division and named the Divisional Communication Officer. This officer supervises the training of the Divisional Section. He pays periodical visits to the Brigade Sections with a view to assisting brigadiers in maintaining a uniform system throughout the division.

When the present system was first started, it was thought by some that the divisional communication officer should command all four sections, and be responsible for their training and even for their work in the field. This would have taken away from brigadiers a responsibility which should be theirs alone, and would have resulted in their looking on the communication section of the brigade as something outside their ken. It would have been fatal to the efficiency of the communication troops, since, as I shall endeavour to show presently, it is essential that generals and staff officers should have a thorough knowledge of the work. I am glad to say, however, that wiser counsels prevailed.

In the field the divisional communication officer controls all communications between divisional headquarters and subordinate units and with other divisions, etc.

III. TACTICAL HANDLING OF COMMUNICATIONS.

I will first deal with the duties of the General Staff, in which, in the case of an infantry brigade, the brigade major must be included, and the communication officer. I purposely couple the two together, as they must work in couples.

I wish to take this opportunity of impressing on everybody here to-day how absolutely essential it is that staff officers should thoroughly understand the tactical handling of communications. Just as every infantry general should know what he has a right to expect of his artillery, though he need not know how to set a fuze, so every general and every staff officer should know the limitations and possibilities of the different means of communication, though there is no necessity for either of them to know a dot from a dash.

It is equally important that the relations between the staff officer and the communication officer should be of the most intimate kind. The staff officer must be hand in glove with his communication officer, who is his most important subordinate. He must take him completely into his confidence and give him the earliest possible information of all intended movements and of the probable course of events, so far as they can be foreseen. He must always be ready to help him with advice.

When I was asked to deliver this lecture it was suggested that I should approach the subject from two points of view, namely, that of the staff officer and that of the communication officer. I can only say that if the relations between the staff officer and the communication officer are what they should be, their points of view will be identical. They must act in perfect accord. The difference between their duties is one of degree only, the communication officer devoting his whole time to communication work and dealing with details, while the staff officer indicates generally the requirements of the situation.

It was further suggested that I should describe the difficulties the communication officer experiences in complying with the requirements of his general. Of course, the communication officer has many difficulties to contend with; many of them I have already indicated in describing the different means of communication. Wires will break at inopportune moments, orderlies will lose their way, fog will come down and make visual signalling impossible. All these misfortunes are every-day occurrences, and the communication officer must be ready with remedies for them all; but as regards difficulty in complying with the requirements of his general, I think that depends more on the general and the staff than on the communication officer himself. If the communication officer is treated as I have suggested that he should be treated, then his general will share his difficulties with him; but if, on the other hand, neither the general nor his staff understand how to handle their communications, if they do not take the communication officer into their confidence, if, without informing him of the probable course of events, they ask him to perform impossibilities, if they think it is sufficient to say vaguely in orders: "The communication officer will maintain communication with all the units of the division," then his path will be thorny, his difficulties will be many, and the communications will most certainly be bad.

Before considering the tactical handling of communications it must be explained that a communication section forms part and parcel of Divisional or Brigade Headquarters, as the case may be. It camps with headquarters, it marches with headquarters; it must always be at hand. This is so well understood in the division to which I belong that the communication section is never mentioned in orders. The position of headquarters is indicated, and everybody knows that it is there that the communication section will be. We should as soon think of putting in orders that the communication section will march in rear of Divisional Headquarters as of saying that the General Staff Officer will accompany the G.O.C.

I will now deal separately with each means of communication.

As regards orderlies, there is little to be said; their tactical handling calls for no special remark.

As regards visual signalling, the golden rule is that the signallers of all sections must always be on the lookout to communicate with each other and to pick up new stations as they are opened.

I believe that it has been stated that satisfactory results cannot be obtained unless signalling is carried out on a prearranged plan, carefully worked out beforehand. It is true, no doubt, that this method will produce the best results, as will be the case with any other military operation; but just as we must train our troops to adapt themselves to the unexpected, so must signallers be trained to work under every variety of circumstance. It is impromptu signalling that is often the most valuable, and once communication officers grasp this, it is remarkable how skilful they become in opening up communication without any pre-arrangement at all.

We now come to what is by far the most important part of the communications, namely, the cable, and it is especially with regard to the cable that a perfect understanding between the staff and the communication officer is so necessary. I do not propose to discuss the question of the communications in a carefully prepared defensive position, nor in the case of a methodically planned attack after careful reconnaissance. It will be more instructive to deal with an encounter battle or a running fight, either of which tries the skill of the communication officer to the utmost.

Certain principles must be observed:—

1. *Never be in a hurry to lay out your cables.* Remember that once you have committed yourself to certain lines of communication they cannot be altered without loss of time and waste of material. The cables should never be laid out until it is evident that you are in for a battle, until the situation has developed sufficiently to enable you to form some idea of the probable course of events, and until you can decide on a more or less permanent position for headquarters.

2. *In deciding how you will lay out your cables, always consider possible developments and possible moves of headquarters.* This is very important. It should be a point of honour with the staff and the communication officer to anticipate the general's moves, so that he can alter his position without losing communication. This can only be done by exercising the greatest care in selecting the routes by which the cables are laid. There are various ways in which communication can

be re-established when a move of headquarters has been made. If possible one always tries to make use of the lines which have already been laid, in which case communication is re-established either by going to a station which is already in existence or by tapping in at any suitable point on one of the existing lines. (Plate I.) If this is impossible or inconvenient a fresh line must be laid, the wagon or pack animal following the general to his new position, laying the cable as it goes. In all these cases communication from the new position passes through the original base office.

A brigade commander by moving up his telephone cable and attaching an instrument to the wire by means of a safety pin can move to the front without ever losing communication either with the firing line or with his divisional commander.

3. *Always try to keep some cable in reserve.* This holds good with communications as it does with any other tactical operation, as will be seen by the foregoing remarks. It is essentially important if a move of headquarters is likely. As a rule with a brigade attacking it is sufficient if brigade headquarters is connected with one of the leading battalions, keeping one telephone detachment in reserve. This reserve detachment may prove invaluable in establishing communication with supporting artillery. In the same way the divisional communication officer will always try to keep one cable cart in reserve at the beginning of an action. It is therefore essential that economy of material should be studied, and that each cable should be made to serve as many units as possible; thus it is often possible to tap in a station for artillery on a cable laid for an infantry brigade.

4. *Take every opportunity of reducing the length of your wires and reeling up superfluous cable.* This can often be done as the action progresses, and should always be done if possible after a move of headquarters, during which the reserve cable has been used up, so as to form a fresh reserve. (Plate IV.)

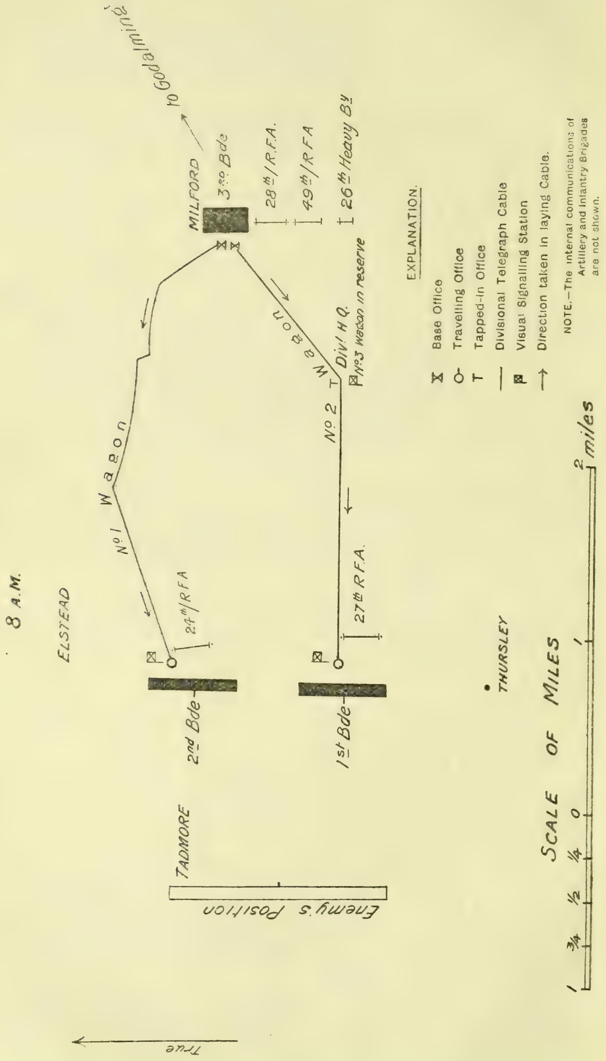
As I have already stated, the art of getting the best out of your communications lies in using a combination of all three methods and in using each in its proper sphere.

For short distances and before communication by other means has been established, orderlies alone may be used; for longer distances visual signalling or the cables, falling back on orderlies if these fail.

When the cables are in use every endeavour should be made to establish a duplicate line by means of signallers. Even if the cables do not break down, a duplicate line relieves the cable if the traffic becomes congested. Important messages may even be sent in duplicate or in triplicate, that is by cable, visual signalling, and by orderly.

Other matters require attention. For instance, discipline at the stations is important; everyone must be kept away from the operators and signallers except the G.O.C., the General Staff (or Brigade Major), and the communication officer. The

Plate I.


8 A.M.
ELSTEAD
TADMORE
Enemy's Position
True
2nd Bde
1st Bde
24th/R F A
27th R.F.A.
No 1 Wagon
No 2 Wagon
No 3 Wagon in reserve
Div! H.Q.
MILFORD
3rd Bde
28th/R.F.A.
49th/R F A
26th Heavy By
to Godalming
THURSLEY
EXPLANATION.
Base Office
Travelling Office
Tapped-In Office
Divisional Telegraph Cable
Visual Signalling Station
Direction taken in laying Cable.
NOTE.—The internal communications of Artillery and Infantry Brigades are not shown.
SCALE OF MILES
1
3/4
1/2
1/4
0
1
2 miles

personal use of the telephone should be restricted to the same officers. Even so, it should be used in this way only when it is necessary to discuss matters personally with a distant commander. For the transmission of orders it is better in every way to leave the message to be dealt with by the operators. The writing of messages requires practice, as much time is saved if they are written in a concise form. In the 1st Division we have eliminated all such expressions as "G.O.C.," "G.S.," "Headquarters," etc. Our messages are addressed to "First Brigade," "Second Brigade," etc., from "First Division." This saves words, and no misunderstandings can possibly arise.

We always put the place and hour of despatch last, thus: "1st Division, Frimley, 10.35 a.m." You may begin writing your message at 10 a.m. at Camberley and finish at 10.35 a.m. at Frimley. It is essential to show the hour at which the message left the sender's hands and the place where he was when he sent it off.

We write all messages on telegraph forms. The greater part of the messages go by wire, and while the telegraph form should always be used for messages sent by telegraph or telephone, it does as well as any other piece of paper for messages sent by orderly. These forms are bound up in books provided with carbon paper, which are carried by a man of the Communication Section, who follows the General Staff officer wherever he goes. This man is trained to write messages from dictation; he also sees to the proper numbering of the messages and to the place and time being properly filled in. He carries the file of messages received.

Explanation of Plates.

Plates I. and II. show the communications actually established in the course of operations which took place last year.

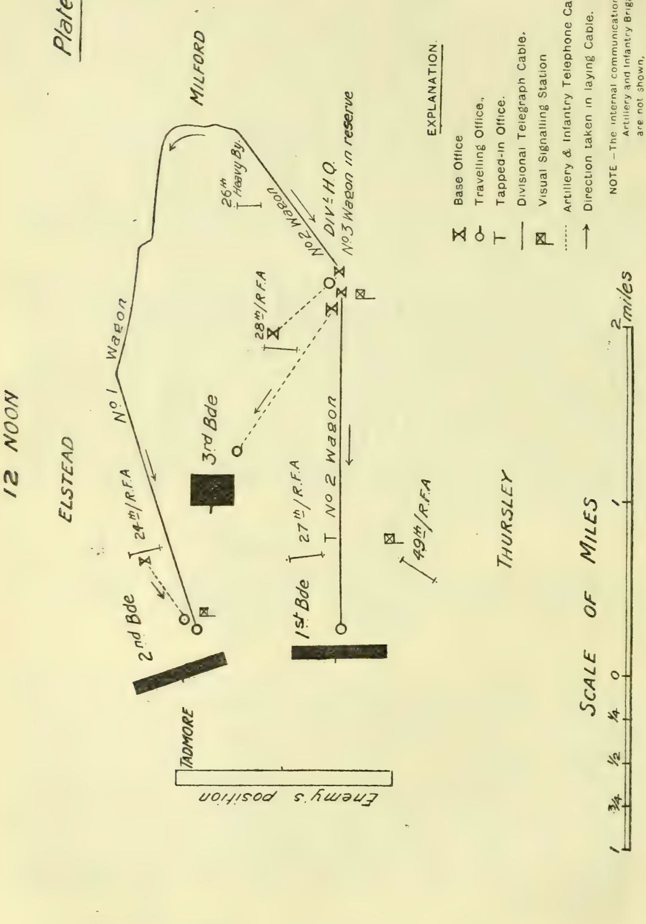
PLATE I.

The division was advancing from Godalming. In the first instance a double base office was established at Milford, from which Nos. 1 and 2 wagons followed the 2nd and 1st Infantry Brigades respectively. Shortly afterwards the G.O.C. decided to move forward and an office for Divisional Headquarters was tapped-in, as shown in the Plate. As, however, it was necessary to maintain communication with the artillery and infantry units, which were ordered to remain at Milford until the situation developed further, the base offices at that place were kept open, messages for the 2nd Infantry Brigade being transmitted through them.

PLATE II.

By this time the action had become general, and the troops at Milford had been ordered to the front. The base offices at

Plate II


12 NOON
ELSTEAD
MILFORD
THURSLEY
TADMORE
Enemy's position
No 1 Wagon
No 2 Wagon
No 2 Wagon
No 3 Wagon in reserve
DIVL H.Q.
2nd Bde
1st Bde
3rd Bde
24th/R.F.A
27th/R.F.A
28th/R.F.A
49th/R.F.A
26th Heavy By.
True
EXPLANATION.
⌛ Base Office
○ Travelling Office.
T Tapped-in Office.
— Divisional Telegraph Cable.
⊠ Visual Signalling Station
...... Artillery & Infantry Telephone Cable.
→ Direction taken in laying Cable.
NOTE – The internal communications of Artillery and Infantry Brigades are not shown.
SCALE OF MILES
1
¾
½
¼
0
1
2 miles

Milford were accordingly closed, and the wires were joined. As it was evident that a further move of Divisional Headquarters was unlikely for the present, the tapped-in station was removed, the cable was cut, and two base offices were established, communicating with the 1st and 2nd Infantry Brigades.

It was considered desirable still to keep one wagon in reserve, so none was sent to the 3rd Infantry Brigade; but as the Brigade passed it was ordered to drop a telephone station at Divisional Headquarters. Being in second line the Brigade could easily spare one of its telephone detachments for this purpose.

Communication between the G.O.C. R.A. at Divisional Headquarters and the artillery units was maintained as follows:—

24th Brigade, R.F.A.—Artillery telephone laid to 2nd Infantry Brigade travelling office.

27th Brigade, R.F.A.—Office tapped-in on cable to 1st Infantry Brigade.

28th Brigade, R.F.A.—Artillery telephone laid direct to Divisional Headquarters.

49th Brigade, R.F.A.—Visual signalling.

26th Heavy Battery, R.G.A.—Mounted orderly.

Visual signalling was also established between Divisional Headquarters and the 2nd Infantry Brigade.

The use made of the telephones of the 3rd Infantry Brigade and the 24th and 28th Brigades R.F.A., is an example of a departure from the normal rule that each commander uses his cables for communicating with his own subordinates only.

Eventually No. 3 wagon laid a shorter line to the 2nd Infantry Brigade, on which No. 1 wagon, having reeled up its own cable as far as Milford, and the portion of No. 2 wagon's cable between that place and Divisional Headquarters, came into reserve.

Plates III. and IV. show the communications during an exercise carried out at Aldershot last year with a view to testing the efficiency of the communication companies. In order to make the test a thorough one the divisions were purposely scattered over a wide front, and no troops were held in reserve.

PLATE III.

The plate shows the communications as established at the beginning of the exercise. The use made of the cable laid by No. 1 wagon is an example of economising wire by making one cable serve as many units as possible. In the first place an office was tapped-in at Mitchett Farm for the 3rd Infantry Brigade and the 24th and 49th Brigades, R.F.A. Of these the 3rd Infantry Brigade and the 24th Brigade, R.F.A., were con-

Plate III

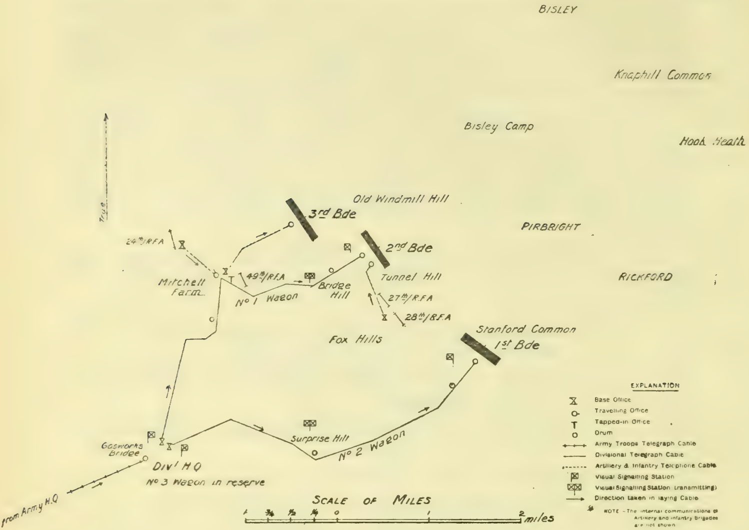
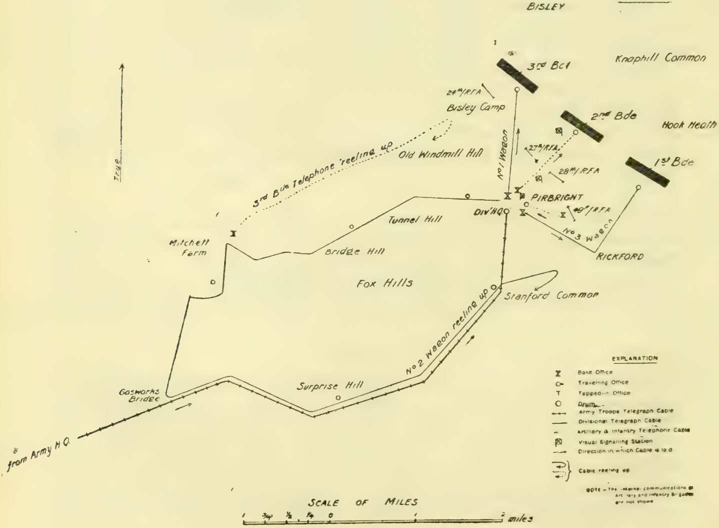


Plate IV



nected with the telegraph office by their own telephone cables; the 49th Brigade, R.F.A., being close to the office, no special measures were necessary. No. 1 wagon itself followed the Headquarters of the 2nd Infantry Brigade, and was connected by an artillery telephone with the 27th and 28th Brigades, R.F.A.

By means of transmitting stations on Surprise Hill and Bridge Hill, communication by visual signalling was established between Divisional Headquarters and the 1st and 2nd Infantry Brigades respectively.

PLATE IV.

In the second phase of the exercise the Division was ordered to pursue an enemy retiring north-east. The 1st Infantry Brigade was ordered to move by Rickford on Hook Heath; the 2nd Infantry Brigade by Pirbirght on Knaphill Common; the 3rd Infantry Brigade by Bisley Camp on Bisley. The artillery brigades were ordered forward in support. It was decided to move Divisional Headquarters to Pirbright.

To deal with the new situation the following preliminary arrangements were made:—

No. 3 wagon was sent to Pirbright to open communication between that place and the 1st Infantry Brigade. It left its light wagon at Gasworks Bridge to bring on the operators and instruments when the time should come to move headquarters.

The 1st Infantry Brigade was ordered to send an officer to Pirbright to conduct No. 3 wagon.

To enable the 3rd Infantry Brigade to reel up its telephone cable, orders were given that on reaching Pirbright, No. 1 wagon was to be diverted from the 2nd to the 3rd Infantry Brigade, and the latter brigade was ordered to send an officer to Pirbright to conduct the wagon by the shortest route to Brigade Headquarters. No. 3 wagon was ordered to hand over to No. 1 wagon four miles of cable, also one office set to enable a base office to be established at Pirbright.

The 2nd Infantry Brigade was ordered to maintain communication with Pirbright by means of its own telephone cable.

The signalling stations on Surprise Hill and Bridge Hill were withdrawn.

The actual move of Divisional Headquarters was carried out as follows:—

As soon as No. 2 wagon reported its arrival at Pirbright, orders were issued to all units that messages for Divisional Headquarters were to be sent to that place, and the 2nd Infantry Brigade was ordered to arrange for messages to be sent on by cyclist orderly down the Pirbright-Gasworks Bridge road to meet Divisional Headquarters.

The army troops cable wagon followed Divisional Headquarters, but as road crossings were numerous it was seen that it would be unable to keep up, so cyclists were attached to it to forward messages on in the direction of Pirbright; cyclists also accompanied Divisional Headquarters. By this means the gap was bridged, and several important messages from the front were received by Divisional Headquarters on the road, were sent back by cyclist to meet the army troops wagon, and were thus transmitted to Army Headquarters.

Immediately before the move of Headquarters, the base offices at Gasworks Bridge were closed and the cables of Nos. 1 and 2 wagons were joined. The operators and instruments were taken on to Pirbright in the light wagon left by No. 3 cable wagon for the purpose.

As soon as No. 3 wagon had established communication with the 1st Infantry Brigade, No. 2 wagon was ordered to reel up. Having reeled up its own cable as far as Gasworks Bridge, it then reeled up No. 1 wagon's cable from thence to Pirbright. This could be done as No. 1 wagon, following the invariable practice, had dropped its empty drums as the cable was laid. On arrival at Pirbright No. 2 wagon came into reserve, when a redistribution of cable and instruments took place, so as to give each cable detachment once more its normal equipment.

Similarly, when No. 1 wagon had established communication between Pirbright and the 3rd Infantry Brigade, the telephone cable to Mitchett Farm was reeled up.

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from June JOURNAL, p. 788.

CHAPTER V.

THE PORT ARTHUR SQUADRON UNDER ADMIRAL MAKAROFF—THE FATAL 13TH APRIL—"WE HAVE LOST OUR HEAD!"

On 18th March the placing of the *Tsesarevitch's* cofferdam was begun. The unfortunate and damaged old cofferdam of the *Retvisan* was removed, and a new one built. Meanwhile, the battleship lay across the basin, her stern secured to a buoy, her bow resting on the bottom near the water's edge. The hole was being provisionally closed by divers, and the pumping vessels were continuously at work keeping under the water. It was said that great difficulty was experienced merely in preventing the water from rising. Slowly but steadily the ship sank deeper and deeper into the soft mud which forms the bottom in the west basin. In spite of this, however, no one doubted that the repairs of the *Retvisan* would ultimately succeed.

"Makaroff goes there nearly every day, and the captain neither eats nor sleeps, but works night and day." This was sufficient guarantee that all would go well.

I have already mentioned that we expected great things from a detachment of workmen from the Baltic Yard. These people's connection with the Government was purely a matter of business. They formed a self-contained section of their Company's *personnel*, and were not interfered with in any way by our bureaucrats.[1]

---

[1] Our expectations are fulfilled.

The detachment of workmen from the Baltic Yard only consisted of a engineer, Mr. K——, a foreman, a draughtsman, one hundred and eighty nine workmen, and two clerks. During the siege, four of their number were killed, one died of scurvy, and eleven were wounded.

On 20th March our wireless stations "heard" the Japanese. That night the destroyers were sent out, but saw nothing of the enemy.

The night of 21st-22nd March was clear, but there was no moon. During this night the searchlights of the fortress repeatedly came upon suspicious objects out at sea. Between 12 and 1, and again towards 4 a.m., the batteries opened fire. The fire was not very brisk, and was not replied to from seaward.

At 5.45 a.m. the general signal was made: "Raise steam for full speed."

Towards seven o'clock, as soon as there was sufficient water, the squadron began to move out of the basins. The cruisers, owing to their light draught, went out first. The *Novik* and destroyers, of course, led. (The latter did not go by divisions, but as the circumstances best suited.) Then came the remaining ships, in such order as fitted in best with their berths. When we (*Diana*) steamed out at 8.25 a.m., the *Askold* and *Bayan* were already circling in the roads.

Far away to the southward, about 10 or 12 miles off, the masts and funnels of the Japanese ships appeared above the

---

Compared with the masses of men which the Imperial Dockyard of Port Arthur had at its disposal, the number of these Baltic workmen was very small. The following is the work accomplished by them:—

Repairing the under-water damage caused by mines or torpedoes to the *Retvisan, Tsesarevitch, Pobieda,* and *Sebastopol* (in the case of the latter, twice over). All these repairs were carried out by means of cofferdams.

Repairing under-water damage from a mine to the *Bayan,* and the best half of similar damage caused by a torpedo to the *Pallada.* Both these ships were repaired in dry dock.

Repairing damage caused to the *Amur* by being rammed. For this purpose the ship was only heeled.

Changing a damaged screw-blade of the *Sebastopol* by means of a bell-shaped cofferdam.

General repairs to the *Peresviet, Sebastopol,* and *Retvisan* after the battle of 10th August.

Repairing hundreds of shot holes of every kind on board our ships during the bombardment from the land batteries.

Repairing the destroyers *Reshitelny, Rasyashtchy, Lieutenant Burakoff, Beshumny, Storoyevoy,* and several others.

The Imperial Dockyard only provided the necessary amount of unskilled labour. There was really no need for this, as the military authorities disposed of any number of men as good. What was of real importance was that the Dockyard authorities did not dare to interfere with the skilful work of the "Baltics." This enforced passive attitude was probably more useful than their active assistance would have been.

I should further like to mention that the Baltic detachment brought with them five railway car loads of material, implements, and instruments. Amongst these were pneumatic, electro-pneumatic, etc., etc., tools, such as we had not up to then possessed at Port Arthur, the chief naval base of our battle fleet.

Naturally, these workmen had been carefully selected.

horizon. We could make out that these were the Japanese battleships and armoured cruisers standing towards Port Arthur in two columns. To the south-east, but much nearer, were the "Greyhounds."

By 8.45 the enemy's armoured ships had approached up to 8 miles, when they altered course to the westward.

"They want to go to Liao-ti-shan and chuck about 'portmanteaus' again," was the joke on board the *Diana*. "They won't hit anything; we have taken care of that."

The weather was glorious: a clear sky, thermometer 37° F., no sea and no swell. A faint breeze was blowing from the south-west.

At nine o'clock the hostile squadron passed out of sight behind the Liao-ti-shan Hills. A single armoured cruiser remained off the mouth of the harbour. Evidently she was to watch how the shells pitched.

At 9.35 the Japanese battleships began to circle south of Liao-ti-shan, just as they did on the previous occasion, and to fire their 12-inch guns at Port Arthur when they reached a certain point. They were probably not a little surprised when they discovered that this time they were not to do this with impunity. We replied. The *Retvisan*, *Peresviet*, and *Pobieda* fired from the basin. Our ships even had a slight advantage, for the Japanese fired under way, whilst ours did so from a fixed place, the position of which was exactly known, just like a shore battery.

Meanwhile, the hostile armoured cruisers steamed past us demonstratively, as though to challenge us to fight. We did not respond. Towards ten o'clock the *Petropavlovsk*, flying the Commander-in-Chief's flag, steamed out into the roads. When the Japanese noticed that our squadron was leaving the basins which were exposed to their bombardment, they concentrated their fire on the entrance. Their practice there was very good. At 10.20 the *Poltava* came out at full speed. Twice a shell struck the water so close to her as to cover her with water and splinters. Luckily, the ship herself was not struck.

At 10.40 a.m. we heard cheering on Golden Hill. The signal station reported by Morse flags that one of the Japanese ships had apparently been hit.[1] This the Japanese did not seem to like. They ceased bombarding and steamed away from Liao-ti-shan. In doing so they carefully kept out of the range of our forts.

Towards eleven o'clock the hostile cruisers approached to 57 cables,[2] evidently with the intention of challenging us. They were five in number, as opposed to two battleships, one armoured cruiser, and two protected cruisers on our side, not counting the *Novik* and the destroyers. The Admiral steered towards them in such a way as if trying to cut them off from their main body.

---

[1] We heard later on that it was the *Fuji*. A 12-inch shell had hit her fore-turret.

[2] 11,400 yards. In the Russian Navy the long ranges are always indicated in cables. One cable = 200 yards.

At 11.30 a.m. the 12-inch turrets of the *Petropavlovsk* opened fire.

The cruisers never replied to our fire, but steamed off to the southward towards their battleships, at high speed. The latter, however, made no haste whatever to come to their assistance. Evidently they wanted to avoid getting within the range of our forts.

Moreover, the *Sebastopol, Peresviet,* and *Pobieda* were just then coming out to support us. The two last named had the deepest draught, and were only able to leave the harbour at the top of high water.

We ceased firing, as the enemy was so determined not to come within reach of our fortress guns. At 11.20 a.m. the flagship made the signal: "Stop engines. Ships' companies to go to dinner." The cooks of messes ran to the galley with their dishes. "With old 'Beardy' there is no loafing. It used to be very different," they were heard to chatter cheerfully as the dinners were being served out.

The next high water was after dark. It was on account of this, and also because the Japanese had retired, that the Admiral made his squadron go up harbour again at once. Towards 12.30 the first two ships, the *Peresviet* and *Pobieda,* received orders to that effect. Whilst they were doing this the remaining ships advanced towards the Japanese. They were to cover the movements of these two ships, which the enemy, owing to the great distance, would anyhow not be able to make out clearly. The Japanese probably thought that we meant to face this unequal contest. They retreated southward, evidently with the intention of drawing us out to sea. We chased the enemy for half an hour and then turned back. The *Sebastopol, Petropavlovsk,* and *Poltava* went up harbour before the tide began to ebb. The cruisers followed them in. By 3 p.m. we were back at our old berth in the West Basin. The whole thing was a *tour de force.* During a single high tide nearly the whole squadron had gone out, manœuvred about, and gone in again. Only a short time ago we required *two* high tides, that is, nearly twenty-four hours, merely to go out.

The feeling amongst the crews was as if we had scored a victory. We certainly had not beaten the Japanese, but we had overcome our own slackness and want of enterprise.

During the night of 24th March we occasionally received Japanese wireless messages. It was intended to send the cruisers out scouting next morning. We were greatly pleased, and in hopes of perhaps coming upon one of the "Greyhounds," but at 4 a.m. there was a thick fog: we could not see a cable's length, and had to abandon all hopes of any adventures. Towards noon it cleared a little, but came on as thick as ever later on.

25th March brought real spring weather with a temperature of 55° F. in the shade. All hands in the dockyard and on board ship were as busy as bees; the *Tsesarevitch's* cofferdam was at last placed: it was now possible to move the battleship into the East Basin, closer to the dockyard. Thanks to the energetic labours of our experienced divers, it had been possible to close up temporarily the hole in the *Retvisan's* bottom: the ship was pumped out and floated once more.

On 25th March the Admiral took his squadron to sea during the early high water: this was soon after daybreak. Makaroff merely meant to practise manœuvres: unfortunately, he was forced into this by our insufficient training. The squadron stood to the southward and to the westward, and carried out various evolutions: their execution was very poor; sometimes it was indeed a sorry sight. "The 'Argonauts,'" growled the navigator.

Towards 9.30 several vessels hove in sight. They were standing on a north-westerly course, across our path, and were made out to be merchant steamers: a fourth was following a short distance astern. The *Askold* received orders by signal to stop and examine the steamers: they were British on the way to Niu-Chwang in ballast; they were allowed to go when nothing suspicious was found on board.

At 10.20 a.m. we made a better haul: the squadron was just passing North and South Hwang-tching-tau. These are the largest islands of the Maio-tao group which lie nearest to Port Arthur. The *Novik* was despatched to see if everything was all right in the Sound. Just as she could see round the Cape, she sighted a small steamer, not flying any flag, and towing a junk. When the steamer caught sight of us she tried to escape; but to get away from the *Novik* and her destroyers was not so easy. A few shots were first fired across her bows and under her stern; when this produced no effect a shot or two was fired into her, and she was finally forced to stop. A portion of the passengers (or crew) tried to get ashore in the junk; they were all captured. They consisted of twelve Japanese and nine Chinese; the steamer was Japanese, of rather less than 1,000 tons. She was called *Haien Maru*, and had been chartered by the special correspondent of the newspaper *Asahi*. Now she was employed, as was pretended, in transporting dealers in wood and fish to the different islands. This was obviously a pretext. The sparse woods of Kwantung had long since been seized for the defence of Port Arthur, and in the sea, mines were caught more often than fish. The steamer had been so damaged by our fire that she was unable to steam with her own engines; when the attempt to take her in tow failed, she was destroyed.

All these details we only heard after our return to Port Arthur; at the time we only saw the *Novik* and destroyers were going slow, and then, when they reached the Sound between the islands, that they suddenly dashed ahead for all they were worth. Before we had time to make out what kind of vessel they were engaged with, their victim was already in flames; the latter had stopped, and our vessels surrounded her.

Every one was pleased with the *Novik*. "The *Novik* is a first-rate little ship; she sees and brings up everything; a regular retriever," was the general verdict.

Soon after this episode we wheeled about. Towards 2 p.m. we re-entered the port.

Whilst we were manœuvring about, the *Amur* was detached to lay mines. She steamed away in the direction of Talienwan; she probably went to Melanhö Bay.

During the night of 26th-27th March the Japanese repeated their efforts to block the entrance to Port Arthur. The attempt began at 2.20 a.m. It was the same sight as the first time; with this difference, however, that no one was in doubt as to the intentions of the steamers: fire was opened instantly all along the line.

The *Retvisan* was, indeed, not at her old billet, but in her place the *Bobr* and *Gilyak* lay in the entrance; and from the foot of Golden Hill the new battery, with the *Angara's* 4·7-inch guns, was firing.

Two of the "blocking-steamers" ran aground on the beach immediately below this battery. When they were still steaming ahead, the destroyer *Silny* delivered a plucky attack on them. Quite indifferent to the hail of our shell, she steamed up close to one steamer and fired her torpedoes at quite close quarters. The torpedoes hit, but were unfortunately placed. None of the steamers were so damaged as to sink at once. One, for instance, had her whole stem shattered, but the collision bulkhead held, and the steamer went on.

Two other steamers kept a little more to the left; one sank before she had come up to the lighthouse, the other grounded precisely at the spot where the *Retvisan* had struck.

It was said that there were more steamers besides these. One portion was supposed to have been sunk by our mines, another by our gunfire, and the remainder had lost heart and fled to seaward. Rumours of this kind must be received with very much caution.

It is astonishing how many hostile vessels are always destroyed in night attacks. Every one has this weakness. No one is boasting, but every one is so firmly convinced of the truth of what he reports, that he is ready to take his oath on it.

Next day, just as it was getting light, the entire Japanese squadron came in sight on the horizon. At 6.30 a.m. the "Greyhounds" came up quite close with the greatest boldness. However, it sufficed for one of our coast batteries to "show its teeth" to drive them away to the proper distance.

Our squadron was on the point of going out of harbour. The Japanese were thus able to satisfy themselves that their second attempt to bottle us up had failed like the first.

Towards 8 a.m. we were already in battle formation. With the *Petropavlovsk* leading, we cruised about in the bay between White Wolf Hill and Cross Hill. Our object was to tempt the enemy to come closer; but he was not to be caught. Until 9.30 a.m. his armoured ships, accompanied by the "Greyhounds," steamed up and down on the horizon. Then they disappeared in a south-easterly direction, without having attempted an attack on the squadron, or a bombardment. We anchored, to wait and see whether they would return. When nothing happened, we calmly returned to the basins about 2 p.m.

In order to stop any further blocking attempts on the part of the enemy, we laid out two floating booms in the roads. Such boom defences, or, at least, the material for them, ought to have been prepared in time of peace. Now it was impossible suddenly to procure all that was needful. We had to make use of what was available, and console ourselves with the faint hope of perhaps being able to strengthen the boom by and by, if circumstances permitted.

The Admiral tested these booms himself, but the results were not very brilliant. The boom was only able to stop small steamers of 1,000 to 1,500 tons, if built with a straight stem (that is, vertical to the surface of the water). Steamers with overhanging bows got over the boom, though with difficulty. When the *Angara* (11,000 tons, slanting stem) was tried, she passed over the boom, with her engines stopped, as if she had never noticed it. The vessel pressed the boom bodily under and kept her way right up to the mouth of the harbour. With two or three steamers of the *Angara's* size, the Japanese could bottle our squadron up in Port Arthur. We therefore had to think out some better means of defence.

The fact that the entrance into the harbour ran quite straight without any bends constituted a great danger. "Blocking-steamers" which, by chance or intentionally, headed the right way, could reach the entrance even with their engines disabled and the rudder shot away, as was proved by the *Angara's* trial. In consideration of the magnitude of this danger, Makaroff ordered two steamers of the East Chinese Railway Company, the *Chailar* and *Charbin,* to be sunk across the channel. They were placed to the westward of the centre of the fairway, near the banks of the Tiger's Tail Peninsula. A little further up the steamer *Shilka* was sunk, but to the eastward of the centre of the fairway. In this way, ships on entering were forced first to keep to the east side of the fairway, then to turn to port, back again to starboard, and then only to steer the usual course. This manœuvre, at night, blinded by searchlights and under fire from the guard-ships and batteries was, to say the least of it, very difficult. Moreover, the "blocking-steamers" aground on the beach below Golden Hill formed a new obstacle.

The protection of the entrance was further strengthened, as far as possible, by a suitable disposition of the cruisers and gun-boats as guard-ships. On the shoal off Lighthouse Hill a "fire-ship" had already stranded. She lay there almost exactly on the spot on which the *Retvisan* had grounded on 8th February. This steamer was used as a breakwater. The *Gilyak* placed herself behind the former and tied up to her. She thus formed, together with the coast batteries (armed by the *Angara*) to the right and left of her, the first line of defence. Further back, to the right and left of the entrance, our gun-boats, secured to buoys, formed the second line of defence. Finally, right inside came the *Askold* and *Bayan,* which swept the whole fairway with their guns. These two cruisers were the third line of defence.

A floating torpedo-net defence for the protection of the guard-ships was being made with the greatest haste. Such a net defence is a boom, from which torpedo-nets are suspended. They were placed right across the shallow entrance, and as the nets reached from the surface of the water to the bottom, they formed a very safe protection against any torpedoes fired from the roads inwards.

We found out that the Japanese intended, after the failures of their "fire-ships," to try and cover the sea with some burning liquid. Their plan was as follows:—When the flood tide was running its strongest, certain steamers were to be made to drift with it up to the entrance. These steamers were to be filled with petroleum, benzin, and any other liquid capable of burning on the water, and the Japanese meant to set them on fire after they had commenced drifting, and then to blow them up. We made some trials to that end, which proved that such an attack would constitute a very serious danger to our squadron. This danger was especially great with southerly winds, even very light ones. Our inventive geniuses were well to the front at once. They constructed several booms of non-flammable material, which would stop the burning stream (only the surface had to be barred). All schemes were at once tested and the best adopted. The Admiral was true to his maxim: "Every one makes mistakes. Far rather acknowledge your mistake ten times over, and start afresh, than be permanently inactive and only consider how the thing had best be done. *Le mieux c'est l'ennemi du bien.*"

Amongst others, the following measures were adopted:—The ships which lay in the fairway for the protection of the harbour entrance were placed with their sterns to seaward. They were secured with strong stern hawsers to buoys, securely moored. When the burning stream approached they were to move their engines full speed ahead. This was bound to produce a powerful surface current outwards. Would it be strong enough to overcome the flood stream on the surface? That was the question. Nothing but the actual test would prove it. Meanwhile, the Admiral would not leave even the most trifling "dodge" untried, if it promised any advantage.

The repairs of our battleships were now taken in hand. The engineers promised to complete the *Tsesarevitch* by the end of May, and the *Retvisan* in June. Some use was even found for the damaged and useless cofferdam of the *Retvisan*. It was repaired, altered in outline, and placed against the *Sebastopol*. By means of this, the damage that battleship had received on 12th March (collision) was made good.

Nearly every night the destroyers were sent to sea. This was done, less with the object of looking for the enemy, who had completely disappeared, than as an exercise. These boats had now to acquire the war training which they ought to have possessed long ago.

The main thing was that no one remained idle.

These were beautiful times. Our new Commander-in-Chief thought of everything. For instance, all ceremonies were abolished. If a senior officer passed the ship, all work went on calmly. This was even the case if he came on board.

"I haven't come here to hold parades. When God permits the war to come to an end, the old routine can be started again. Now, we have no time for such like." Thus Makaroff spoke, half joking, half in earnest.

The Uniform Regulations were also simplified as much as possible. The monkey-jacket was worn for everything. However, we were all ordered always to carry some arm, for all contingencies. The choice of weapon was left to each individual. According to circumstances, it might be sword, dirk (worn afloat by all commissioned officers), or even pistol. Still better was a good revolver, not worn in a case or belt, but simply in one's pocket.

On 3rd April a tragi-comedy was enacted. In broad daylight and in fine weather a merchant steamer, showing no colours, was sighted heading boldly for Port Arthur. We were all delighted, since it was quite clear that she was bringing in supplies of some kind. When the vessel reached the limits of range of our fortress guns she stopped, and evidently had a look round. Then, instead, as we expected, of making recognition signals to Golden Hill, she turned short round and steamed away—showing Japanese colours.

When the cruiser on guard duty steamed out and began to chase her, all that was left of her was a small puff of smoke on the horizon.

The squadron was in such good spirits that this piece of "colossal cheek," carried out with impunity, only evoked hearty laughter. It gave rise to a number of well-meant witticisms with reference to "Beardy." Much in this way the soldiers of Napoleon's Old Guard must have smiled half-respectfully, half-familiarly, when their Emperor could not get his foot into the stirrup.

"It seems that 'Little Grandfather' was quite mad with rage. He certainly had been made a fool of and no mistake. It is quite incredible. Every one sees the steamer, she goes everywhere, turns everything topsy-turvy, and then gets clean away before our eyes. There is no fool like an old fool, my 'Little Grandfather.'" Our people mocked away in this style, and chuckled at the thought that their ideal chief had for once in a way been taken in.

Orders were given that between daybreak and dusk the cruiser on guard duty in the inner harbour was to be prepared to go to sea at a moment's notice. All the same, it was the state of the tide which decided, even in case of cruisers, whether they could go out. If low water coincided with daybreak or dusk, the guard-ship was paralysed. The natural solution of this dilemma was to keep the cruiser in the roads and to relieve her as the state of the tide permitted. But this would have meant exposing one of our cruisers to torpedo attack every night, and we only possessed very few of them. The Admiral found a very happy solution. As I have already mentioned, the Japanese "fire-ships," which had grounded at the foot of Golden Hill, formed a kind of breakwater.

Between them and the *Shilka* the steamer *Eduard Barri* was sunk. She thus acted as a kind of breakwater, behind which a number of buoys were securely moored. The cruiser on guard secured head and stern between these buoys. There she was well protected against Whitehead torpedoes by the submerged hull, could not swing, and, irrespective of wind and tide, always had her broadside facing seawards, whilst her bows headed the right way for getting to sea. The cruiser was thus always in a position to meet an attack from seaward with the whole of her armament. On the other hand, she had only to cast off her bow and stern fasts, if required to chase. It was so simple and so obvious, yet no one had hit upon it before.

On 6th April, Golden Hill signal station reported the "Greyhounds" in sight. The *Bayan* was the guard-ship outside. All remaining cruisers were ordered to raise steam. There was, however, no occasion for them to go out. The "Greyhounds" only showed themselves and disappeared at once. The weather was now spoiling.

On 7th April it rained nearly twenty-four hours on end, and on the 8th there was a thick fog. We neither saw nor heard anything of the enemy.

On 9th April the *Diana* was on guard. We cruised about the whole day outside Port Arthur, and kept a sharp lookout, but saw and heard nothing.[1]

On 10th April the weather at last improved, and orders were given for the whole squadron to go to sea next day for tactical exercises.

---

[1] We were only on guard by day and had to keep underweigh. The work of placing the buoys, at which the guard-ship was to lie, was not yet completed.

The moving out began at 6.30 a.m. By about 8.30 all ships were out—that is, five battleships, four cruisers, and the destroyers. We proceeded in cruising formation towards Talienwan, and performed evolutions. There was a very light Easterly wind. The sky was cloudless, the horizon clear, and the range of vision in the clear air very great. The signalmen with the best and most experienced "seamen's eyes" sat in the crows' nests, close under the truck (also an institution of Makaroff's), and kept as sharp a lookout as they possibly could. The torpedo officers did not budge from the receivers of the wireless instruments. All was in vain; there was nothing to be intercepted in the air, nothing to be seen afloat. Our sailing had certainly become known, and it was in no one's interest to remain in the neighbourhood of Port Arthur.

We went as far as Talienwan, described a curve to the southward, and returned, getting back at 4 p.m.

On 12th April the *Diana* was again on guard. The day passed without any occurrence of note. That night we inaugurated the new billet behind the sunken steamers.

Towards 10 p.m. Admiral Makaroff and his staff came on board.

Apart from the short apparition of the "Greyhounds" on 6th April—and even that was not fully authenticated—two weeks had now passed, during which the enemy had given no sign of life. That was certainly suspicious, and therefore all destroyers ready for sea were sent out in a body during the night of 12th-13th April. The boats were this time to go a long way. They were given the task of searching the Elliot Islands. These islands are about 60 to 70 miles from Port Arthur, and it seemed very probable that the Japanese occasionally used them as a base. Theoretically, the dark period of one night sufficed completely for the purpose. The destroyers were promised, however, that at daybreak the *Askold* would in any case go out to meet them. The cruiser was to cover the boats if they had been delayed, and were obliged to return by day. The *Askold* had been chosen so as to obviate any possible mistake. She was the only vessel in the Far East with five funnels, and could therefore be recognised without any signals, even in the dark. The weather now turned wet. It varied between drizzle and light rain. The Admiral went through our battery. The men were at their action stations, and he said a few words to them, which means so much in war. Hardly had he completed his tour, when something was sighted. It was difficult to say what it was. Still, we saw in the searchlight beam from Cross Hill what was undoubtedly the outlines of vessels. They bore S. 60° E. Taking into account that our searchlights could not quite reach them, and estimating our distance from Cross Hill, as well as the angle at which its searchlights were trained, we made their distance to be about 2 miles.

The drizzling rain was brightly lit up by the searchlight beams, and rendered the field of view opaque. It seemed as if these shadows sometimes lay motionless, sometimes moved backwards and forwards on the same spot. It was now 10.30 p.m.

"Shall I open fire?" the captain asked. "Oh, who can tell what it is," the Admiral replied rather crossly. "They are probably our own destroyers. They know nothing of night work. Some of them probably got separated from the rest and are now pottering about in front of Port Arthur. They can't find the others, and dare not return into harbour from fear of being taken for Japanese. Bad luck to it!" Makaroff mastered his ill-humour at once, and added in a calm voice: "Note the bearing and distance very carefully. If these turn out not to be our boats, we must certainly search the place very carefully to-morrow. Possibly something unpleasant for us has been dropped there."

The vessels now became visible, but only for a moment, and then disappeared in the rain.

At 10.50 p.m. we heard to the southward of us, approximately in the direction of White Wolf Hill, the sound of guns. It did not appear to come either from the shore, or from the sub-division of harbour defence destroyers, which were watching the southern boom placed there.

The remainder of the night passed peacefully. We saw nothing; in fact, we could really see nothing on account of the rain.

Just as it was getting light next morning, at 4.15, the Admiral and staff returned to the *Petropavlovsk*. Precisely at that moment several columns of smoke showed up on the eastern horizon. These were our destroyers returning from their expedition, which had been carried out successfully, but without result. They had not found anything in the bays of the Elliot Islands. Unhappily, the boats did not all return. The Admiral's fears had been only too fully justified. Some of the boats had lost touch with the main body, and had not regained it. Suddenly we saw the flashes of guns in the dawn to the south-east—a direction in which we had not looked for anything. (It was 5.25.) The firing could be heard distinctly. Who were fighting there, we were unable to make out, owing to the great distance. It was clear, however, that small vessels, probably destroyers, were fighting together. We (*Diana*) could have got away quickest, but the Admiral apparently did not want to employ the *Diana*, which could have been mistaken for the *Iwate*, as he had promised the boats a cruiser, unlike any Japanese ship. For some reason or other the *Askold* was not ready. Consequently, the *Bayan* (four funnels), which also did not resemble any Japanese ship, was ordered out. What with orders and counter-orders a good deal of time was lost. When the *Bayan* steamed out, we thought we had been quite forgotten. We therefore set off without orders and followed her. Of course we were soon left behind. When we reached the open, the *Bayan* was already a long way ahead. It turned out that the destroyer *Strashny* had parted company during the night. On looking for her consorts she came across a Japanese destroyer flotilla, which she joined. The Japanese also did not notice that the *Strashny* was an enemy, so they cruised about together before Port Arthur till daybreak. As soon as it was light enough a mutual recognition took place, and at once a desperate fight commenced, of one against six, at quite close quarters.

The *Bayan* hurried as fast as she could to the assistance of her small comrade. All she could do was to scatter the hostile boats, which were steaming round the place where the *Strashny* had sunk. The Japanese destroyers fled to the southward. The remnants of the *Strashny's* heroic crew were swimming about in life-belts, or clinging to pieces of wreckage. They greeted their cruiser with joy; but already the "Greyhounds" were approaching from the south at top speed, in the place of the destroyers, which had fled.

Sceptics will, of course, say that they were only four protected cruisers opposed to our armoured cruiser. Still, it was four to one. The *Bayan,* or her captain—ship and captain are one—did not hesitate a moment. She covered those in the water with her high sides, lowered boats to pick them up, and faced the attack lying still with her engines stopped. At that moment we were still under Golden Hill and could not make out what was going on. Our hearts stood still at the thought that her engines might be disabled. Could we arrive in time to assist her? Great Heavens, how we cursed the St. Petersburg works where the *Diana* had been built! Instead of the 20 knots of the contract, we were hardly going 17. The oldest engineer had now to listen to some very bitter truths from the mouth of the youngest sub-lieutenant. The *Novik* came out and ran past us, as if we were at anchor. The *Novik* was followed by the *Askold.*

"Just look at that! It is easy to see that they were built abroad. That is something different from our 'Goddess.'"

The *Bayan* was already returning. The "Greyhounds" did not follow her. Apparently they had no desire to come within reach of our coast batteries. It was 7.15 a.m. The destroyers back from the Elliot Islands had already got in safely. At 7.15 the *Petropavlovsk* came out. The *Poltava* followed. The *Bayan* reported by semaphore and wireless what she had seen. She was not sure whether in the heat of the action she had saved everybody: possibly there might still be some men on the wreckage. The Admiral at once signalled: "Single line ahead on the *Bayan. Bayan* to lead the squadron back to the scene of the disaster. Every one to keep a good lookout for wreckage."

The line was formed. As we lay there, with engines stopped, to let the other ships pass and then form up astern, the *Petropavlovsk* passed quite close along our starboard side.

A suppressed "Ah!" passed through the ship's company. The Admiral came over to the port side of the bridge—that is, the side nearest to the *Diana*. He wore an overcoat with a fur collar. The wind was blowing about his big, fair beard. "Your health, my lads!" came in his mighty voice. Every word was clear and distinct.

"We wish your Excellency good health!" sounded back in specially hearty, cheery voices.

"God grant a happy issue!"

"Respectful thanks your——"; but the regulation reply did not get beyond this. Instead, there burst out a frantic "Hurrah!"

The Admiral had already left the bridge and gone into the chart-house. He now came out again, went right out to the end of the bridge and took off his cap, waving it at us with a smile.

"Hurrah!" sounded again and again from the crew. The men clambered on to each other's shoulders to see "Little Grandfather." "Hurrah!" now shouted the officers, forgetting all restraint, and waved their caps amongst the men.

We saw our Admiral for the last time.

In my diary is written as follows: "8 a.m.—We are in single line ahead, in the following order: *Bayan, Petropavlovsk, Poltava, Askold, Diana, Novik.*"

The "Greyhounds" reappeared out of the morning mist. We steamed towards them. This time they were led by two armoured cruisers. The enemy advanced boldly towards us, though he saw that we were the stronger. A long range action commenced. At 8.10 the Japanese turned away suddenly and steamed off to the southward. The shortest distance had been 50 cables (10,000 yards). We had no losses. For a little while longer we cruised about over the spot where the *Strashny* had gone down, and looked about for any one to save, but without any result. We were then about 15 miles from Port Arthur. Any one with good eyes could see that the rest of our squadron was coming out. At 8.40 a.m. the Japanese battleships appeared out of the mist. They joined the armoured cruisers and "Greyhounds," and altogether headed straight for us. Now the Japanese were again the stronger, nearly twice as strong, in fact.

We followed our Admiral, who was turning towards Port Arthur and retiring. The Japanese followed us, with the evident intention of attacking. The *Novik* and the destroyers made good use of their speed. They steamed ahead and a little to port. The Diana became rear ship. I confess quite candidly that our position was causing me some anxiety. We were steaming as fast as we could, but the distance steadily decreased. By nine o'clock we were only 38 cables (7,500 yards) from the hostile leader (apparently *Mikasa*). Our stern 6-inch guns had already adjusted their sights. We were waiting for the flagship to order us to open fire; but no signal came. The Japanese also did not fire, just as if there had been an agreement to that effect. At 9.15 we reached the fire zone of our fortress guns (6 to 7 miles). At 9.30 the enemy gave up the chase, without having fired a gun, and shaped course to the westward. The distance between us began to increase.

"Why did they not fire?" we asked ourselves. The *Diana* and *Askold* had been the rear ships at a distance of 38 cables, surely that was tempting enough to send some "portmanteaus" whizzing across.

Towards 9.30 we joined up with the remainder of the squadron. It was complete except for the damaged ships. The Japanese slowly moved behind Liao-ti-shan, as if they intended to commence their usual bombardment. Admiral Makaroff apparently intended to stand backwards and forwards as usual between White Wolf Hill and Cross Hill. The sinking of the *Strashny,* the hurried exit of single ships which this had caused, the sighting of the hostile fleet, and the forming up of the squadron—all this had somewhat blunted the impressions of last night, which, moreover, appeared quite unimportant. Neither the Admiral nor those about him gave any further thought to the suspicious shadows which we had seen so indistinctly when the searchlights were illuminating the rain so brightly. These shadows, however, had been seen precisely on the "figure of eight" we were making, namely, South of Cross Hill and East of White Wolf Hill. Every one had forgotten that we were to search out this place to see whether they had dropped "something unpleasant for us."

"The gunlayers to remain at their guns; the remainder fall out, but not to separate," I ordered.

The gunnery lieutenant came up to me. "Now for the old story," he said; "now they will chuck 'portmanteaus' from a distance. Let us go and have a smoke."

"By all means," I replied. "Nothing of any importance is likely to happen now. For to-day we have got everything behind us. We'll start washing decks. They haven't been touched since the hands were called."

We both came down from the upper bridge. The gunnery lieutenant went to the smoking place, where the slow match was kept burning. I went on the forecastle, where I stood at the starboard bow 6-inch gun, and was just giving the boatswain the usual orders, when an explosion, with a dull, rolling sound shook the whole ship, as if a 12-inch gun had gone off quite close. I looked round vaguely. A second explosion, even more violent! What was happening? Suddenly cries of horror arose: "The *Petropavlovsk*! The *Petropavlovsk*!" Dreading the worst, I rushed to the side. I saw a huge cloud of brown smoke. "That is pyroxiline, therefore a torpedo," passed through my mind. In this cloud I saw the ship's foremast. It was slanting, helpless, not as if it was falling, but as if it were suspended in the air. To the left of this cloud I saw the battleship's stern. It looked as always, as if the awful happenings in the forepart were none of its concern. A third explosion! White steam now began to mix with the brown cloud. The boilers had burst! Suddenly the stern of the battleship rose straight in the air. This happened so rapidly that it did not look as if the bow had gone *down*, but as if the ship had broken in half amidships. For a moment I saw the screws whirling round in the air. Was there a further explosion? I don't know. It appeared to me as if the after-part of the *Petropavlovsk* (all that was visible of her) suddenly opened out and belched forth fire and flames, like a volcano. It seemed even as if flames came out of the sea, long after it had closed over the wreck.

Never, even at times when the most important orders were being given, had such silence reigned on board our ship, as at this gruesome spectacle. Habit, however, becomes one's second nature. As an old navigator I was in the habit of noting everything. When I saw the explosion, I mechanically looked at my watch, and then wrote in my note-book: "9.43.—Explosion on board *Petropavlovsk*"; and then: "9.44.—All over."

I believe such, almost unconscious, actions save one's nerves at moments that are so awful that one's brain reels. Now, as I am writing these lines and am living through it all again, I am firmly convinced of this. It was by my writing down these events, with their accurate time by watch, that I first managed to grasp them as real facts, and to think them out logically, as well as the other notes in my book. Without this mechanical action, panic might have seized upon me. Naturally, these workings of the mind were quite unconscious.

Outwardly all the officers of the *Diana*, like myself, remained calm. To judge by all one saw, it appeared to me that every one felt instinctively that an incautious word, a hasty movement, might conjure up a panic. We were passing through one of those critical moments, in which an insignificant external cause may incite the masses to the greatest heroism, as well as produce the most contemptible cowardice. The second-in-command, Rear-Admiral Prince Uktomsky, judged the situation quite rightly. Whilst the destroyers and torpedo craft were hurrying to the spot where the *Petropavlovsk* had sunk, and were saving what there was left to save, he hoisted the signal: "Follow me in single line ahead!" Then he placed his *Peresviet* at the head of the squadron, as if nothing had happened, and led it on as Makaroff had done.

The Commander-in-Chief had fallen, the command devolved on the next in seniority. *Le roi est mort, vive le roi*! That was well done! Every one grasped that instantly.

As is known, only seven officers (the Grand Duke Cyril amongst these) and seventy-three men were saved out of the whole crew of the battleship.

The squadron steamed in very good order in the wake of its leader, as usual up to White Wolf Hill. Here it reversed its course in succession towards Cross Hill. On board our ship there was a death-like silence. But this was no sign of depression. Every soul was burning with rage against the successful enemy. All were determined to fight to the last man. The ship's company had gone to action stations of their own accord, and stood ready.

At 10.15 a.m. the *Peresviet* had already turned 16 points. Again a mine exploded, and the *Pobieda,* the second in the line, began to heel over slowly. The *Peresviet* stopped engines and turned short to port. The formation was lost: the whole squadron got mixed. Suddenly guns went off everywhere, here and there ships were struck by shell, projectiles whistled over our heads, and splinters struck the ship's side. Our ship now commenced an irregular fire. I was standing on the upper bridge with the gunnery lieutenant. At first we looked at one another, dazed, as if neither of us would believe his own senses and wanted to have his observations corroborated by the other.

"What *is* the matter?" he asked. "Panic," I said. There was no need to say more. We both dashed down from the bridge. On the lower bridge I saw the captain standing at the door of the conning tower.

"What are they firing for?"

"I don't know who has ordered it, sir."

"Stop it! They are off their heads!"

What was now going on around us was incredible. Mingled with the thunder of the guns came cries such as: "It's all up with us!"—"Submarines!"—"The ships are all sinking!"—"Fire, fire!"—"Save yourselves!"—The men had completely lost their heads. They hauled the hammocks out of the nettings and tore the life-belts out of each other's hands. Some were standing by to jump overboard. "Sound the cease fire!" roared the gunnery lieutenant. His voice was hardly audible in the general din. He seized the bugler, who had hidden in a corner, by the collar of his coat, and dragged him up to the bridge. At last the bugle sounded, but in a very shaky manner. "What's the matter with you?" I cried. "Have you got something sticking in your throat? Sound again! Again! Don't stop! They don't hear it!"

The notes now came better, but no one paid any attention to them.

There was a crash between the funnels. Afterwards we discovered that it was a Russian shell. Luckily, it only cut the launch's purchase and did no other damage. I ran along the batteries. "Officers, please not to allow any firing. Drive the men away from the guns." Spoken words had no effect on the gunlayers. They did not budge from their guns, and fired shell after shell, aimlessly, at an invisible enemy. We had to use force. It is wonderful how brute physical force can bring men to their senses, when they have lost their heads from the terror of imminent death.

Order was soon restored, and the firing ceased. The men recovered their senses, and with guilty faces commenced collecting the scattered hammocks and life-belts. The guns' crews fell in at their guns. Some attempted to justify themselves, and addressed the officers timidly. They said: "It had all come so suddenly. Some one had called out, and then all the others joined in."

"What on earth did you fire at? Who ordered you to fire?" shouted the gunner furiously at a gunlayer, whom he had just torn away from his gun with all his strength.

"I——" stammered the man. "God knows—I don't."

"You nearly hit the *Askold*. If you had, then God help you!"

"Don't be angry, sir, I quite see it now."

I don't think I am boasting when I say that the *Diana* was one of the first ships where this aimless firing into the water and into the air, produced by the general panic, ceased. In the other ships it still lasted some minutes longer.

Some ships remained stationary, others steamed on in any direction, regardless of the formation. Others, again, turned with their helms hard over, and threatened to ram another ship any moment.

Why did the Japanese not make use of this moment to attack us? If they had concentrated their fire on the centre of this huddled-up mass of ships, every shot would have told, whilst hardly any reply would have come from us. Happily, they did not take in the situation, or possibly they could not make up their minds to act. Otherwise they would certainly have annihilated us completley. The *Peresviet* signalled: "Proceed into port, battleships leading."

It was now 10.25 a.m.

The first to enter was, of course, the *Pobieda*. She was able to work her engines, and was only heeling 5° to 6°. She had been lucky. The mine had gone off just under one of her largest coal-bunkers, which had been full, and the coal had absorbed the shock.

If only the *Petropavlovsk* had had such luck! Soon after noon we were back at our old berth in the West Basin.

What a day of misfortune! Before the war broke out we possessed seven battleships. Now only three were left: *Peresviet, Sebastopol,* and *Poltava*. However, this was not the loss which weighed on us. As the squadron was steaming up harbour, and in the absence of all official news, every one, from the oldest to the youngest, was anxiously looking out for signals. Every one still had the secret hope that Makaroff might after all have been saved, but dared not say so aloud. Every one was wishing with all his heart that one of the battleships would soon hoist the flag which we had not long ago greeted with such joy on board the *Novik*.—We were not to see it again!

It was a terrible day. Previous to this, and again later, during the war, I passed through bad moments, but never did I experience such a state of awful depression as after this event. My feelings were shared by all.

"Don't go about like a drowned rat," I said to the boatswain; "you must cheer up the men, keep up their good spirits. You don't seem to be doing anything towards this. For shame! War can't be made without losses. A battleship has gone down and the squadron has been weakened. We shall receive reinforcements. A fresh squadron is coming out. None of your hang-dog looks and idleness."

"Yes, yes, your honour," said the boatswain; "we can't do without losses." He spoke in a hesitating tone, and did not look me in the face. "It's not that at all, your honour. What is a battleship? They are welcome to sink another one, and even a couple of cruisers. That's not it; but we have lost our head. Oh, why had it to be just him and not any of the others?" His voice broke, and he turned away. Just as my boatswain, thought also the masses. This idea dominated officers as well as the common seaman, only on the lower deck, amongst those simple people, it was more openly discussed than in the officers' messes.

(*To be continued.*)

GERMAN TENDENCIES WITH REGARD TO THE PREPARATION AND DEVELOPMENT OF AN ACTION.

By Captain F. CULMANN, of the French General Staff.

Translated for the General Staff from *Choses d'Allemagne,* 1908.
By kind permission of the Author.

IN the following treatise we propose to point out the German methods as regards the preparation and development of an action. We shall deal with the views expressed by the most authoritative German military writers, the principles laid down in the latest training regulations, and the data furnished by the Imperial Manœuvres, in which the commanders of the opposing sides are frequently officers destined for the command of armies in war.

The Germans reject any fixed formula or "normal type" of action, and insist upon the adaptation of the means available to the circumstances of each case. They are of opinion that strategy is the product of the character and intelligence of the Commander-in-Chief, and bears the stamp of his personality.

In the following lines, therefore, there will be found no attempt to describe typical battles, but only an indication of the *tendencies*. It is necessary to make this preliminary remark, because, with a view to clearness, we shall sometimes have to be more dogmatic than is, strictly speaking, admissible.

The tactical preparation of an action will be treated at some length, as it is precisely upon this point that opinions most differ in France and Germany.

CHAPTER I.

THE PREPARATION FOR BATTLE.

The General Advanced Guard.

In France, the general advanced guard has for its objects :—

1. To ensure the security of a march.
2. To obtain information within an area (which increases with the numbers of the force, the length of the front and the depth of the columns) on the proximity of the enemy, the roads he is using or

neglecting, his strength, and his intentions if possible, with a view to enabling the commander of the force to decide in what direction he will move, what dispositions he will adopt for the march, and for the concentration of his troops. The advanced guard thus makes it possible for the columns to remain separate for the purpose of movement and supply.

3. To give the commander of the force time for carrying out his plans in spite of the enemy; and to enable the troops in column of route to take up formations with a view to action.

As soon as contact has been once obtained by rifle and gun fire, the advanced guard continues its two-fold work of reconnaissance and protection. For the impending fight it procures:—

a. For the commander of the force: The *definite data* required to enable him to act with full knowledge of the situation, in ordering and carrying out (even in spite of the enemy) "a sound manœuvre, based upon, and applicable to the conditions" (Lieut.-Colonel Foch).

b. For the troops: A solid and strong barrier, under cover of which they will carry out the preliminary movements which may lead to victory.

In short, the object of the advanced guard is to obtain information, to provide against surprise, and secure freedom of action.

"The conception of an advanced guard (which applies to a detachment, an army, and indeed to a group of armies) dominates all questions connected with the art of leading in war. This is so true, that an officer, confronted with any given strategic or tactical situation, will avoid making any very gross mistake if he thinks, first of all, of the advanced guard and of the zone of protection which it affords" (General Bonnal).

The employment of strategic advanced guards composed of all three arms—a consequence of the permanent necessities of war—is also a result of the increased size of armies, and of their subdivision into great independent bodies of troops. The employment of such advanced forces made its first appearance under Napoleon, as Clausewitz explains:—

"Frederick the Great used to form his advanced guard of some thousands of cavalry (furnished, as a rule, by the cavalry on the flanks of the first line) who, as soon as the march was finished, rejoined their main body.

"Bonaparte, who possessed no less decision of character, and whose troops were quite as capable of manœuvring as those commanded 40 years before by Frederick II., almost always covered the movement of his army by a strong advanced guard.

There were two reasons why the action of Bonaparte was, in this respect, so different to that of Frederick.

"First, great changes in tactics had been introduced. An army was no longer led, on the field of battle, as a homogeneous, concentrated and indivisible mass manœuvring under the direct command of its chief and, so to say, almost within reach of his voice. A battle was no longer one single action, but consisted of a greater or less number of concomitant actions—either simultaneous or successive. The general plan of action had, therefore, to be subdivided into subordinate plans, and the chief command into subordinate commands all acting in accordance with the views of the Commander-in-Chief. Now, at the moment when the presence of the enemy is signalled, in order to arrange so complicated a plan and to make suitable dispositions, both *time* and *information* are required, and these can only be secured by a strong advanced guard capable of *investigation* and *resistance*.

"Secondly, modern armies are much larger and occupy a much wider expanse of country, which is another reason for covering them with strong advanced guards. Frederick the Great led from 30,000 to 40,000 men, whereas Bonaparte brought some 100,000 to 200,000 men into line."[1]

The Germans, reverting, it would seem, to the traditions of Frederick the Great, are inclined to form their advanced guards (in the case of an army) of cavalry divisions only.

"The strategic advanced guard," says General Schlichting (considered to be the leading exponent of Moltke's doctrine), "must not be rejected in all cases, but its employment can no longer be maintained as a rule. Without being formally tabooed, it will no longer be formed except under exceptional circumstances."

"The idea of launching strong mixed bodies of troops in advance of an army is far from being justified in all cases. On the contrary, the principle must be unreservedly accepted, of pushing forward strong masses of cavalry, reconnoitring far to the front, whose duty will be to furnish the necessary *data* to form the basis for decisions to be taken."[2]

Twice only in the last twelve years at the Imperial Manœuvres (in 1900 in Pomerania and in 1905 on the Rhine) have we seen the commander of one of the sides form an advanced guard of the three arms; even then it was formed more with the object of covering the main body than of obtaining data on which to base the plan of action.

The Napoleonic principle: "engage, and then one sees" does not apply, in Germany, to the General Commanding-in-Chief; it is doubtful even if the subordinate commander, who does the fighting, troubles his head much about it.

---

[1] Théorie de la grande guerre, tome I., p. 275.

[2] Truppenführung und Heereskunde, 1905, p. 175.

This tendency, on the part of the Germans, is explained by their confidence in the numerical superiority and efficiency of their cavalry. It may also be due to the fact that their military education, bearing the stamp of their national character and also of the daring and hopes begotten of a prolonged succession of victories, enables them to come to a decision quicker, and upon less complete information. They consider that the secret of victory, and even of security in war, lies above all in a strong will, dominating that of the enemy, and carried into effect with overwhelming rapidity and the utmost energy. With them it is not the situation accurately known that should rule the offensive, but a rapid and forcible offensive which should *create* the situation, of which full advantage is to be taken.

"This determination to operate according to a *preconceived* plan, must be carried to such a point that the enemy, notwithstanding any projects he may have been able to form, shall be compelled to submit, without reserve, to the law laid down by our own initiative" (Von Bernhardi).

But a knowledge, at least approximate, of the distance of the enemy, of the area within which he is moving, and of his movements, is indispensable to the commander of an army, to ensure its timely concentration, and to furnish the elements necessary for a decision—even if it be "preconceived." On account of the slowness and torpor of the movements of an army, where situations can only be created or modified slowly, the Germans hope that their cavalry divisions, reinforced by artillery and supported by machine guns, and grouped if necessary into powerful masses, will furnish a series of reports extending over several days, which, completed by those of their secret service —excellently organised—and by the inherent conditions of the general situation, will afford, as a rule, adequate information. In case of need—and this will often occur—they will have resource to hypothesis.

"In order to solve a tactical problem," says Moltke, "we must first put ourselves in the position of the enemy, and ascribe to him the most judicious measures."[1] "Are not the enemy's rational measures the best foundation we can give to our own combinations?" (Von der Goltz).

Even in the days when the infantry weapon fired slowly, had a short range, and was liable to miss fire if it was raining, *i.e.*, when cavalry was much more powerful compared with infantry (the advanced detachments of which it was capable of handling very roughly), Napoleon, at any rate, considered it desirable, as a rule, to form his advanced reconnoitring force of all three arms. Moreover, notwithstanding his intellect, he avoided formulating theories. Views vary to a wonderful extent, and even a rational basis of argument is still singularly fragile; the war of 1870 alone is enough to prove that fact.

---

[1] Thèmes tactiques, solution du thème No. 51.

However that may be, to employ cavalry as the general advanced guard, is to entrust the security of the troops, and the commander's freedom of action, to the most unstable arm of the service.

Both of these points are, no doubt, secured as long as the distance to the enemy is greater than the front upon which the columns are marching; but they both become subject to very grave risks as that distance diminishes, for the defeat of a mass of squadrons is both sudden and rapid. Moreover, cavalry is the arm, above all others, which is especially affected by moral factors: ability of the commander, chance, the nature of the ground, etc. A numerical superiority is a less certain guarantee of success with cavalry than in the case of any other arm. Even if victory obtained a precarious security for the army in rear, the reconnaissance would be limited in extent, owing to the lack of resisting and penetrating power of cavalry, even if accompanied by quick-firing artillery, and supported by machine guns, cyclists, and small detachments of infantry.[1]

Armies which renounce advanced guards of all three arms, run the risk of a strategic surprise, and of making a useless or false manœuvre. Rapid and energetic action on the part of a general, both clear-sighted and happy in his combinations, can alone avoid or palliate the inconveniences of such an arrangement, which would be extremely dangerous in face of an active adversary.

The General Reserve and the Decisive Attack.

The trend of German opinion, with regard to the employment of reserves, and the decisive attack, is clearly shown in the following lines written by Major Kuhl, of the German GeneralStaff.[2]

"The study of Napoleon's campaigns still shows us the great general and eternal principles of command in war; but it is an exaggeration to assert that working tactical examples, capable of application at the present day, are to be found in those campaigns. This is certainly the case when attempts are made to copy, nowadays, the Napoleonic method of fighting an action, which consisted in holding the enemy everywhere, and in bringing up reserves in mass, acting upon the Commander-in-Chief's own order, to deliver the decisive blow at a point selected by him. Such methods have become impracticable

. . . .

"The question arises whether, in the great battle of the future, it will be possible to deliver the decisive stroke by means of a reserve. The latter could only intervene where the situation was ripe for such intervention. But will the Commander-in-Chief be able to detect, from the spot where he may be, the point suitable for such action? If he is, will the reserve have time to move up to it, with the enormous extent of front taken up by modern armies? The history of recent campaigns affords no example upon which to base an assertion in the affirmative.

---

[1] The Germans have no combatant cyclist units.

[2] Truppenführung und Heereskunde, 1904, p. 64, *et seq.*

"Even if the moment were propitious, there would still be reason to ask if such intervention on the part of a general reserve would be useful. It is certainly not so when the fire preparation has been thorough, for in that case the troops in rear, in the same section of the battlefield, are sufficient to give to the firing line the moral support it requires, to dash forward to the final assault. If, on the contrary, the situation is not ripe, the reserves, because of their mass, would certainly suffer a catastrophe.

"The employment of a general reserve, at all events in the Napoleonic sense, such as is represented in certain quarters, even amongst Germans, as being strictly practicable, is—as a matter of fact—no longer admissible. We shall no longer see decisive strokes, like those at Wagram, Gross-Görschen, and Ligny, upon the battlefields of the future.

"Is it, then, necessary to have a general reserve?

"It is manifest that each of the great bodies of troops distributed along the front, as also their subdivisions, will need local reserves to feed the firing lines, and to keep up the maximum intensity of fire. This is the principal reason for the deep formation. But these local reserves are sufficient to give to the firing line the moral support necessary to carry it forward to the assault, and also the feeling of being supported. Contrary to the French opinion, according to which the commander should give the order for the decisive attack, it seems probable that the signal for the assault will be given by the firing line.

"What then should be the position of the general reserve?

"In the centre it would be best available for a central attack. But this form of attack has become more and more difficult and unsatisfactory, as the increased range of modern firearms has made it possible to bring a more powerful concentration of fire to bear upon an assailant, whose advance takes the shape of a salient. If, on the other hand, it is proposed to use this reserve on a flank, it will be difficult to do so, at the time and place selected, as it would have to make a flank movement in rear of the front. As a flank appears to be the most suitable place for employing the reserve, it will be put there, as a matter of choice. But in that case why not push it up beforehand, especially as it would then be in a position to envelop the enemy? One may say what one will against the mania for enveloping movements, but surely no one can deny that *envelopment is the most effective form of attack,* because it is the only certain means of deploying superior numbers of guns and rifles, with a view to developing a converging fire, and promises the best results by operating on the flanks and rear of the enemy?"

Von der Goltz also says: "Recent great battles have been won by an enveloping attack directed against one of the enemy's flanks. It is the same idea as that upon which Frederick the Great's attacks, with an oblique line, were based; an idea which should guide us during the prelude of every action."

The result is, as Major Kuhl again says:—

"In modern war, the general reserve will be used to bring a converging fire to bear upon the enemy, by means of an enveloping movement, rather than held back, massed in army corps, behind the front, ready to act. But the most favourable case of all will be when, as at Sadowa, the envelopment of the enemy has been effected by the converging march of separate fractions of an army.

"In renouncing the decisive shock of massed reserves, the Commander-in-Chief in no sense abdicates his powers. His action—perhaps now more delicate than ever—will show itself at another time, *i.e., in the preparatory phase of a battle.*"

While the battle is going on the commander will retain at his own disposal only a small reserve, with the object not of directing the course of events, but of parrying any unforeseen occurrence or to fill a gap in the line. At the Imperial Manœuvres, the strength of this reserve often barely amounts to one-eighth of the available force.[1]

The reserve is often provided with groups of machine guns, a very mobile weapon at the immediate disposal of the officer commanding the force.[2] Also, since the introduction of quick-firing artillery, several batteries form part of the reserve; but this occurs only at the beginning of the engagement and generally only in the larger units (army corps, etc.).[3]

This constitutes in fact a return to the corps artillery under a different name. It also means the restoration to the officer commanding an army corps of the power of making his own action felt. The fog of war, which has increased of late by reason of the more general employment of concealed positions, has probably been responsible for this.

---

[1] *Examples:—*

On the 10th September, 1896, Field-Marshal von Waldersee kept six battalions, out of 50, at his own disposal.

On the 13th September, 1899, out of six divisions, the King of Wurtemburg kept only one regiment, which he placed in rear of the centre.

At the Imperial Manœuvres in 1901, the Commander of the XVIIth Army Corps, who commanded on one side, kept four battalions and three batteries in reserve, *i.e.*, barely one-twelfth of his strength. Sometimes there was no reserve at all.

[2] Machine guns are at the immediate disposal of the officer commanding the force (Art. 198, Machine Gun Training Regulations). After the preliminary engagements, "machine guns should be as much as possible retired from under fire and be held ready for subsequent employment." They form in the hands of the officer commanding the force a reserve which can be rapidly employed to support threatened points, to act against the wings or flanks of the enemy, and to prepare the decisive attack.

[3] Infantry Training Regulations, Art. 294, and Artillery Training Regulations, Art. 365.

Major Kuhl, in the passage quoted above, in common with the vast majority of German writers, and in consonance with the constant practice at the Imperial Manœuvres, is inclined to advocate a converging or enveloping movement, carried out by the advance of a line of columns on a wide front. "No one denies," he says, "that this operation has certain drawbacks; for instance, the battle must develop on the lines already prepared, for the General Officer Commanding will not be able to introduce any great or essential modification in the distribution of his forces." In fact, only partial and local modifications can be carried out, in the form of voluntary assistance given by a subordinate commander (*e.g.*, the commander of an army corps or division) to a neighbouring force less favourably placed, with regard to ground or the general situation, than himself. Such cases of initiative, which must be unreservedly approved, occurred in 1870, and have been seen occasionally in great manœuvres.

In conclusion, Major Kuhl adds the remark—which is, in fact, an admission and the best criticism of the methods which he so ably deals with—"if the stroke is not successful at once, it has failed!"

The deep formation recognised in France, does not suffer from this drawback. Thanks to this formation, the future remains, to a large extent, still open; a clear-sighted and alert commander, with a capacity for prompt decision, will be able to remedy—at least, to some extent— mistakes due to incomplete or false information, to the unforeseen, to unfortunate accidents, to his own fault or that of his subordinates, all of which are things which form the current coin of war.

But however this may be, the Germans, with a line of columns marching on a wide front, will generally be in a position to oppose the French general advanced guard with rapidly increasing forces, and to attack its flanks. Modern armament makes a frontal attack more difficult and more lengthy, while at the same time it makes an enveloping attack more fruitful and rapid. It will, therefore, be well for the French advanced guards to cover a wide extent of country, and also to be strong in artillery, with a large supply of entrenching tools; arrangements must also be made—a difficult matter enough, in view of the depth of the army's formation—to ensure a prompt supply of ammunition. Moreover, the *moral* of commander and troops alike must be particularly high.

But the French advanced guards, by acting as a bait, will have the advantage of misleading an enemy relying upon brute force, and inducing him to deploy in a wrong direction. Meanwhile, the main strength of the French army will remain available for operations, the success of which may be reasonably expected, because the enemy will require a very considerable time, proportionate to his strength, in order to rearrange his columns and to correct such a mistake.

But one must not disguise the difficulty of a manœuvre like this, which has to be conceived and executed under pressure of an adversary, who has by his numerical superiority obtained the initiative and whose *moral* is increased by success.

The Strategic Advance.

In view of the general situation, and of the instructions he has received, the Commander-in-Chief of an army has at his disposal, even before the advanced cavalry forces meet, a mass of *data* sufficient to enable him to come to a decision and to select a primary objective.

It is, then, that, on the French side, the composition is decided of one or more advanced guards, pushed forward into the zones where reconnaissance or screening operations are especially necessary. The army, as a whole, remains in a deep formation, and gives no clue to the plans of the commander, nor to the operations which he will undertake, for nothing is yet definitely decided. If the general situation be very obscure, as, for instance, at the beginning of 1806, the army would be in a lozenge-shaped square, or *échelon* formation, capable of facing in any direction, and also of moving out a body of troops, as an advanced guard, to oppose the enemy wherever he might show himself.

The German army, preceded at a distance of several marches by the bulk of its cavalry, advances in a formation which would vary according to circumstances. All the army corps might move abreast, or in certain cases some of them might remain in second line. Should the roads available make this necessary, or if the obscurity of the general situation makes it desirable to provide for the possibility of an eventual change of direction, it would then be advantageous to take up a provisional formation approximately equal in breadth and depth (*e.g.*, the 3rd German Army, in the middle of August, 1870, marching from Nancy towards Chalons).

The extent of front which the army could take up without danger, depends upon the urgency of the question of concentration for action, *i.e.*, upon the distance from the enemy (von Blume). Security is, in fact, based upon information alone, for cavalry can hardly stop, or even seriously delay, a hostile force of all arms. According to the information received and the general situation, an engagement is either declined or accepted.[1] In the latter case the general disposition is modified according to circumstances, the front (upon which the advance is being made) being closed upon the centre or upon a flank, as may be most suitable.

---

[1] The decision to refuse or accept an engagement is, therefore, generally made prior to the infantry being engaged, and not, as the French Regulations indicate, after the engagement of the advanced guard. For only the weak advanced guards of small detachments can be extricated with any ease; a strong advanced guard would usually only be able to break off the engagement under cover of the night.

As soon as the situation admits, the manœuvre to be carried out is decided upon. At the approach of the enemy (at least 24 hours beforehand, in the case of an army—von Blume), the original alignment is modified, and the army takes up an *échelon* or concentric formation, with a view to enveloping the enemy wherever he may be met, and also, *at first, the zone in which he is moving,* for " an envelopment is most simply executed when the troops detailed for it can, owing to the direction in which they are marching, be directed from a distance against the enemy's flank."[1]

" The Commander-in-Chief decides which of his two flanks will make a demonstration or remain on the defensive, and which one will take the offensive " (von Scherff).

" He will divide his forces into a practical attack and a secondary attack, allotting the largest possible number of troops to the principal attack " (Griepenkerl).

Troops must be used most sparingly along the front, especially according to German ideas. The principal attack being decided upon *a priori* according to the information received from the cavalry, is always subject to considerable uncertainty as to the strength of hostile troops which will be met with. The attack may, moreover, find itself opposed to a new front. The Germans, therefore, in default of the security which comes from a knowledge of the enemy's dispositions, which only the action of a strong advanced guard can furnish, provide themselves with that which comes from strength, and insure themselves against *the unknown* by *numbers*.

"In order to be certain of victory," says Clausewitz, " numerical superiority must be such that it alone compensates for all other factors capable of telling in the enemy's favour, such as the ability of his commanders, the *moral* and training of his troops, luck, &c."[2]

The corps detailed for the main and secondary attacks are at the outset separated from one another. " As the enveloping troops must advance at an angle to the main front, an interval must be left. It should be such that the two inner flanks do not close in on each other during the attack " (Infantry Training Regulations, Art. 394).

The interval in the case of two armies operating together will be as much as a day's march; which is what Moltke ordered the night before the battle of Sadowa. The further off the enemy is, and the larger the forces composing the frontal and enveloping attacks, the greater will be the interval between the last-named forces. Consequently, between their places of concentration and their subsequent lines of advance, intervals must occur of which an adversary with manœuvring power can take advantage to break through the front. But for this manœuvre the adversary's force must be united, and should have somewhat of the advantage in the time taken to mobilise. The operation is by no means impracticable, if only the offensive is favoured by the nature of the country, and is not checked by permanent fortifications.[3]

---

[1] Infantry Training Regulations, Art. 393.

[2] This is the whole teaching of the battle of St. Privat. Moltke, when he had by no means grasped the entire situation, wrote at 10 a.m. on 18th August to Steinmetz, who had 50,000 men, to attack the front, and to Prince Frederick Charles with 200,000 men to attack the flank. Yet the final envelopment was brought about by a single brigade.

The corps which are to deliver the frontal attack move by divisions or brigades, making the utmost possible use of the roads available; those which are to execute the enveloping attack keep a deep formation, in view of the great efforts which will be demanded of them.

In order to enable the artillery to eventually make the best use of the ground and to employ concentric fire, the regulations have directed, since the adoption of quick-firing guns, that all columns marching separately should be accompanied by batteries of artillery, even if their usual organisation does not include this arm.[4]

Each of the individual columns is preceded by a tactical advanced guard of no great strength. "Owing to the changes in the method by which strategical exploration is carried out (*i.e.*, it is now entrusted entirely to the cavalry) the *rôle* of advanced guards has diminished in importance. They are merely the first *échelon* of the troops to be deployed." (General von Schlichting.)

They are generally composed of infantry and cavalry only; this applies even to the advanced guard of a mixed brigade (6 battalions and 6 batteries). "The officer commanding a division (12 or 13 battalions and 4 brigades of artillery) would do well to keep his batteries at the head of the main body and not tell off any to the advanced guard because of the numerical weakness of the latter" (General von Schlichting). In this way the whole of the artillery can be simultaneously employed and its unity of action insured.

---

[3] This breaking up into columns is constantly practised at manœuvres. It is called "Entfaltung" (deployment) Infantry Training Regulations, Art. 315. It may, or not, be preceded by a formation on a larger front, Aufmarsch (assembly).

[4] In the advance into position, the batteries should keep to the road as long as practicable. If possible the advance should be made simultaneously in several columns (Artillery Training Regulations, Art. 413).

When the troops advance to the attack by several roads the officer commanding decides by which road or roads the artillery is to march. If the whole of the artillery be kept together in one column, transmission of orders and the employment of the artillery with a common tactical objective are facilitated. If the artillery be distributed among the different columns, it will often allow a better utilisation of the ground and will facilitate the distribution of the artillery by groups (Artillery Training Regulations, Art. 391).

The centre of gravity of the artillery mass should, however, be pushed as far forward "as its safety admits and its probable early employment in action demands" (Field Service Regulations, Art. 340). As to the heavy artillery with which each German army corps is now provided, "it marches usually behind the infantry of the main body, but, if the attack of an entrenched position is expected, it should be placed nearer the front to ensure its employment as soon as the opportunity occurs." That is to say, it marches in rear of the leading division when an army corps is marching in column, or in the rear of the field artillery when marching with a division alone.[1]

In this way the army advances in line of columns the depth of which increases towards the decisive flank. Before long the cavalry divisions clear away from the front, when proximity to the enemy is reached, and mass themselves on that flank which is to be enveloped. They push forward in front of the troops executing the enveloping movement, to reconnoitre for them, to protect them, and to conceal their advance. Finally, in the combat, they prolong their outer flank.

In short, even before the first shots are interchanged, the Commander-in-Chief will have distributed his forces and assigned the parts they are to play. He launches his army and "prepares" the battle.

The significance of the dispositions made, however, will not be missed by a wise adversary; the German method will, therefore, scarcely enjoy the advantage of surprise.

---

[1] Article 343, Field Service Regulations, as amended by orders of 8th October, 1903. The heavy artillery marches ordinarily behind the combatant troops and occasionally in rear of the first line of the train.

(*To be continued.*)

NAVAL NOTES

Home. The following are the principal appointments which have been made :—

Rear-Admiral—F. S. Pelham to be Admiral-Superintendent, Gibraltar Dockyard.

Captains—C. G. F. Cradock, C.B., M.V.O., to "Victory," as Commodore, 2nd Class, in Command of R.N. Barracks, Portsmouth; A. P. Stoddart to "New Zealand."

The new first-class battleship *Superb* commissioned at Portsmouth on the 9th ult., and joined the First Battle Squadron of the Home Fleet, under the command of Admiral Sir W. H. May, K.C.B., K.C.V.O.

Admiralty Inspection of the Fleet and Visit of the Delegates to the Imperial Press Conference.—On Saturday, 12th ult., an opportunity was afforded the Delegates of the Imperial Press Conference to be present at the inspection by the Lords of the Admiralty of the fleet at Spithead. The ships were anchored as shown in the accompanying plan :—

Line A.—The First Battle Squadron of the Home Fleet, composed of the first-class battleships *Dreadnought* (flagship of Admiral Sir W. H. May, Commander-in-Chief of Home Fleet), *Bellerophon*, *Superb*, *Temeraire*, *Lord Nelson* (flagship of Rear-Admiral C. J. Briggs), *Agamemnon*, *Irresistible*, *Bulwark*.

First Cruiser Squadron, composed of the first-class armoured cruisers *Drake* (flagship of Rear-Admiral the Hon. S. C. J. Colville, commanding), *Indomitable*, *Inflexible*, *Invincible*, *Minotaur*.

Protected cruisers *Isis*, *Dido;* and repair ship *Cyclops*.

Line B.—The Second Battle Squadron of the Home Fleet, composed of the first-class battleships *King Edward VII.* (flagship of Vice-Admiral Sir A. B. Milne, Bart, Commanding Squadron), *Britannia*, *Hindustan*, *Dominion*, *Hibernia* (flagship of Rear-Admiral J. Startin), *New Zealand*, *Commonwealth*, *Africa*.

Second Cruiser Squadron, composed of the first-class armoured cruisers *Shannon* (flagship of Rear-Admiral R. S. Lowry, Commanding), *Warrior*, *Defence*, *Cochrane*, *Natal*.

Protected cruisers *Juno*, *Talbot;* and repair ship *Assistance*.

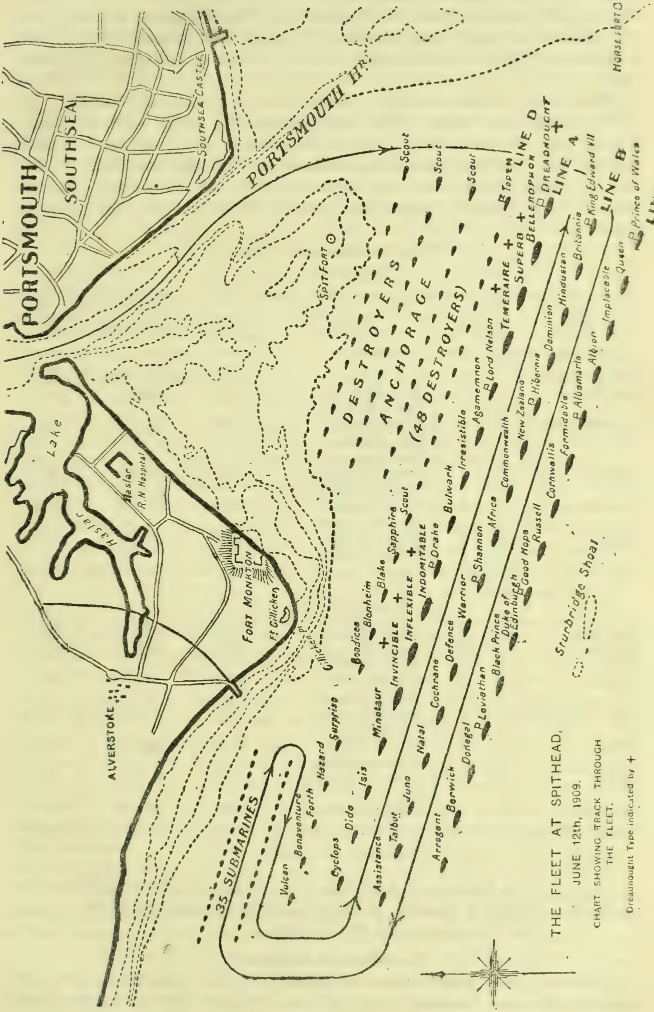
Line C.—The Atlantic Fleet, composed of the first-class battleships *Prince of Wales* (flagship of Vice-Admiral H.S.H. Prince Louis of Battenberg, Commander-in-Chief), *Queen*, *Implacable*, *Albion*, *Albemarle* (flagship of Rear-Admiral W. B. Fisher), *Formidable*, *Cornwallis*, *Russell*.

Armoured cruisers *Good Hope* (flagship of Rear-Admiral F. T. Hamilton, Commanding Fifth Cruiser Squadron), *Duke of Edinburgh*, *Black Prince*, *Leviathan* (flagship of Rear-Admiral A. M. Farquhar, Commanding Fourth Cruiser Squadron), *Donegal*, *Berwick*.

Protected cruiser *Arrogant*.

Line D.—Third-class cruiser *Topaze* (broad pennant of Commodore E. F. Charlton, Commanding First Destroyer Flotilla), 12 destroyers, *Adventure* (scout); third-class cruiser *Sapphire* (senior officer's ship, Second De-

Home.



THE FLEET AT SPITHEAD,
JUNE 12th, 1909.
CHART SHOWING TRACK THROUGH THE FLEET.
Dreadnought Type indicated by +

Home.

stroyer Flotilla), *Blake* (depôt ship), *Blenheim* (depôt ship), third-class cruiser *Boadicea*, despatch vessel *Surprise*, with the *Hazard, Forth, Bonaventure*, and *Vulcan* (submarine depôt ships). The remaining 36 destroyers were moored in three lines inshore of Line D, with a scout at the head of each line. Thirty-five submarines were moored in two lines in Stokes Bay.

The total number of ships present was 144, manned, roughly, by 40,000 officers and men. The total number of guns mounted was: 12-inch, 144; 9·2-inch, 100; 7·5-inch, 42; 6-inch, 351; making a grand total of 637. The total aggregate displacement of the fleet was about 771,200 tons, of which 381,450 tons was represented by the battleships, 224,650 tons by the armoured cruisers, and another 42,500 by the other cruisers and scouts.

CLASSIFICATION BY TYPES.

Battleships.

Type.	No.	Guns.	Knots. speed.	Displacement.	Complement.
Dreadnought	4	Ten 12-inch	21·8	17,900-18,600	726
Lord Nelson	2	Four 12-inch Ten 9·2-inch	18·7	16,500	747
King Edward	8	Four 12-inch Four 9·2-inch Ten 6-inch	18·5	16,350	781
Duncan	3	Four 12-inch Twelve 6-inch	19·1	14,000	750
Formidable	6	Four 12-inch Twelve 6-inch	18·0	15,000	781
Albion	1	Four 12-inch Twelve 6-inch	18·2	12,950	700

Armoured Cruisers.

Type.	No.	Guns.	Knots. speed.	Displacement.	Complement.
Invincible	3	Eight 12-inch	25·0	17,250	731
Minotaur	3	Four 9·2-inch Ten 7·5-inch	23·5	14,600	755
Achilles	3	Six 9·2-inch Four 7·5-inch	23·3	13,660	704
Duke of Edinburgh	2	Six 9·2-inch Ten 6-inch	22·8	13,660	704
Drake	3	Two 9·2-inch Sixteen 6-inch	24·1	14,100	900
Argyll	1	Four 7·5-inch Six 6-inch	22·3	10,850	655
Berwick	2	Fourteen 6-inch	23·0	9,800	600

Australia. *The Defence of Australia, by Colonel H. Foster (Director of Military Studies, Sydney University), Laid by Order before the Commonwealth Parliament.*—

II.—WHAT IS REQUIRED.

In the last article the strength of the possible attack to be resisted was discussed, and it was shown that a large force of troops could not be directed against Australia. The business of the local troops is to make the success of a small force, which might land, impossible. In fact, the land forces must be numerous and efficient enough to compel the invader to come with a large force if he is to succeed. If this be the case, naval action will ensure that this invasionary force cannot reach Australia. Her defence rests, therefore, on the interaction of two forces—the naval force, which, though small hostile expeditions may evade it, can certainly stop all large ones; and the military force, which can make the success of the small expeditions so impossible that no wise enemy will launch them at all. Let us consider the defence required for this latter purpose.

The first fact to be noted is that the population and wealth of Australia is mainly confined to the south-eastern corner of the island continent, or roughly to a strip a few hundred miles back from the line of coast from Adelaide to Rockhampton. This coast-line, which gives access to the populated part, is thus the part of Australia where defence is needed, as it is here that attack will find the most attractive objective. We may, perhaps, add Perth, Hobart, and a few of the northern ports. The object of the enemy would be to dominate the cities, to occupy populous and fruitful country, like the Illawarra, or the plains near Adelaide, or, in case of only a raid being possible, to seize coal at Newcastle or Wollongong, destroy merchant shipping in the chief ports, or ocean cables at their landing places, thus cutting off Australia from the world.

The defence force, having, as we said, to be large enough to make a small attack hopeless, should provide mobile forces, with plenty of Light Horse and machine guns, and with some field artillery, capable of being rapidly directed to any point where the enemy may land. This can be done within the limits named in South Australia and South Queensland by using the railway system. Beyond it the north and west of the continent, as well as Tasmania, are only to be reached by sea, so that the possibility of transporting troops depends on the sea being kept open for the passage by the navy. Any threatened points in these parts must unavoidably depend at first on their own local forces to resist attack.

The main points which might most tempt an enemy to attack, namely, the capitals and Newcastle, must also have definitely assigned local garrisons for their defence. The attack will be so sudden that no warning will generally be given, by which forces from a distance could be brought up in time. The local forces, which could make the place secure against the raid which is most likely to form the attack, need not be strong. Some thousand or two foot, or horse, riflemen, with a few machine guns, could prevent any landing on a coast they were guarding. In time of war some permanent look-out, a signal or telephone system, and trenches ready for occupation, should be provided. Larger attacks, which these local garrisons could not resist, or landings at harbours like Twofold Bay or Port Lincoln, far from centres of population, must be dealt with by the organised mobile forces sent for the purpose, so as to prevent the enemy establishing himself and forming a base of operations. If he were to land and try and operate inland, he would be cut off from his home base, and the field forces of the Commonwealth should soon block his advance, and eventually capture his force. The fear of this result will deter the enemy from despatching expeditions necessarily limited in strength to a small number of ships which might manage to elude the navy, and will probably limit his action to making raids of three or four cruisers which might land a few hundred men. At any point where such a raid could profitably be made there should be some defence, which should comprise batteries to keep ships out of the port, and a small infantry garrison to repel any attack on the batteries by a landing force.

As a raiding force can make a feint of attacking, and then move away, and reappear suddenly at some distant point, it is obvious that the important points, capitals and ports, should each have its own garrison to rely on. No transfer of mobile troops from one part of the country to another should be made till the enemy has clearly shown his intention of effecting a more serious attack than a temporary raid. The railway schemes for all probable movements of troops should be systematised beforehand, and arrangements made for using civil resources for telegraphic communication of news, and for obtaining labour, medical assistance, supplies, and transport for the force in the field.

The strength of the forces thus shown to be needed for defence of Australia will be that sufficient to provide garrisons for all her capitals and chief ports, as well as mobile forces readily available to act at any other threatened point, remembering that as the attack has the advantage of surprise and rapid movement one central force cannot be thrown in time from point to point, but there must be several in various parts, each capable of dealing with any possible attack.

Without going into details beyond the scope of this article, a few words may be said on the material defences of the ports. The best and cheapest is no doubt a few 6-inch guns, manned by trained and resolute men, and assisted in firing at night by searchlights. There is little necessity for submarine mines to deny the port to hostile ships, which will probably be deterred, or certainly prevented, from entering the harbour by the guns. In England mines have been given up, as being unnecessary, expensive, and a possible danger to merchant ships. A striking comment on this comes from the United States, where a well-known naval officer writes :—"When we Americans remember what an intolerable nuisance were the torpedoes planted in our various harbours in 1898 (during the Spanish war), we can hardly be surprised that Great Britain has decided to withdraw mines from her mercantile ports."

As regards defences afloat, much has been said advocating torpedo-boats and submarines. But both require specially highly-trained crews, and are ill-adapted for work in rough seas, which are not only dangerous, but obscure the vision and diminish greatly the speed of small craft.

The effect of torpedoes is much overrated by the public. One commander-in-chief during the Manchurian war, Admiral Bridge, well known here, has stated that the one certain deduction from the naval war was the ineffectiveness of torpedoes. Other reports bear this out. At the battle of Tsu-shima, over 150 torpedoes were fired, with only seven or eight hits; and these against helpless ships, although the Japanese had devoted much time, money, pluck, and perseverance to perfecting torpedo-boat work. Submarine boats are at present quite experimental. They are slow, deficient in power of vision, sea-worthiness, and range of action; they form an extravagant substitute for guns in defending a harbour; while at the present time not yet adapted for action on the high seas at any distance from their port.

Australia.

So much for the local and passive defence of Australia, which looms far too large before the public eye. Its advocates seem to expect, or almost to desire, occasion of invasion, so as to have the opportunity of making use of the passive defence, whose preparation they call for. But the fact is that the people of Australia can defend their country most effectually, not by measures of local defence, which contemplate her undergoing some of the ills of invasion, but by averting that danger before it comes on them. An enemy vigorously attacked at home will not be very capable of turning his attention to sending expeditions away. He will more likely devote his strength to defending himself.

Command of the sea confers on Great Britain the power to move forces to any part of the world, in order to attack and embarrass her foes. This has been exhibited in her past history, and will form her most ready means of defending her daughter dominions in the future. It was never shown on such a scale as in the South African war, where 250,000 men were moved 6,000 miles over sea at an average of 1,000 a day, a rate not exceeded by the Russians over their Siberian railway.

In such expeditions Australia will certainly find it to the advantage of her security from attack to join. To begin with, their seizure of any possible footholds for the enemy within reach will deprive him of the advantage of harbours which might be converted into extemporised bases for his attack on Australia. Many foreign Powers have such harbours near Australia, all open to her attack, and, in case of war with any of those Powers, forming objectives for the employment of her forces towards her defence. The enemy's coaling stations scattered about the ocean would especially form a desirable object of attack, as their capture would help to guard Australian trade afloat by depriving the enemy of places where his cruisers could coal or refit.

Beyond these, however, there are greater objects for possible British operations, in which Australia, as she grows in wealth and her commerce increases, will have more and more interest. Thus, if England were obliged to fight to keep open the Suez Canal now, and that of Panama in the future, Australia would be virtually concerned in assisting that effort. Again, British interests in China cannot fail to be most important to Australia, who could hardly sit idle while they were being maintained by the forces of Great Britain. Similarly any danger of the absorption of the Malay Islands by a great Power would even more immediately concern Australia. The security of India against internal rebellion or foreign aggression would also be of direct interest to Australia. Even this year a Victorian regiment has volunteered its assistance to the mother country in India. Still more we can be sure that if peril should threaten her sister dominions in South Africa, New Zealand, or Canada, Australia would desire to come to their assistance, as readily and effectively as in 1899.

This glance shows a number of possible theatres of war in which Australia would wish to bear her share, and in all of them her forces would be a valuable reinforcement to the army of the Empire, whether in attacking an enemy's naval ports, seizing bases of operations for British naval and military expeditions, or in adding her troops to the British forces in the field.

In considering these possibilites, we cannot fail to see how little purely local defence is required to guard Australia from aggression. The defence

Australia,

of each part of the Empire, like Australia, is best effected by mobile forces ready to strike whenever they can most affect the enemy. Local forces, above the minimum necessary strength, are, if kept at home, merely isolated bodies of troops, deliberately foregoing all the advantage of mutual assistance in the great effort which would provide a common and adequate defence for the whole of the dominions of the Empire.

Nor does this demand any great expenditure or change in the constitution of the local forces, from which the volunteering troops for service abroad will be drawn. Identical organisation, arms, and equipment are desirable; similar administration and military law; a uniform system of carrying out command and staff duties, and of drill and training for officers and men; in fact, what in machinery is called "standardisation" of parts, would be most helpful in promoting the efficiency of an army composed of contingents from all parts of the Empire. Each might well have the factories to produce arms and ammunition, as well as equipment, and military stores of all sorts. Each part of the Empire, like Australia, would then be a base of supplies, of stores, and of reinforcements for the Imperial forces engaged in her neighbourhood.

An army of volunteers so formed and trained will have fewer points of contrast and friction, and will possess a cohesion in the fact that all are preserving the safety of their own homes by attacking the possible enemy, and that each man is in arms because he knows that the defence of his own country is at stake. Such a force will be a true popular army, and on the virtue of such an army may well be quoted some stirring words, spoken on the 26th of May, 1797, by one of the noblest and most brilliant of British statesmen, Charles James Fox :—

"They compel us to admiration by their vigour, their constancy, their spirit, and their exertions in every great emergency in which they are called on to act . . . . it arouses everything that belongs to the soul as well as to the body of man; it makes every individual feel that he is fighting for himself, and not for another, that it is his own cause, his own safety, his own concern, his own dignity on the face of the earth. . . . . Who does not find in this principle the key to all the wonders which were achieved at Thermopylæ, and elsewhere, of which the recent and marvellous acts of the French are frequent examples? He sees that the principle of liberty only could create the sublime, irresistible emotion. Shall we, then, refuse to take the benefit of this invigorating principle, by the mere force and spirit of which France has brought all Europe to her feet?"

France.

The following are the principal appointments which have been made :—

Capitaine de Vaisseau—E. M. Barthes to "Couronne" and Command of Gunnery School. Capitaines de Frégate—E. A. Raffier-Dufour to Command of Madagascar Naval Division; L. L. Préaubert to "Vaucluse"; C. L. Ducoroy to "Descartes"; F. J. Mouillé to Command of 1st Channel Submarine Flotilla; V. G. Voitoux to "Arbalète" and Command of 2nd Mediterranean Destroyer Flotilla. — *Journal Officiel de la République Française.*

Launch of the "Danton."—On the afternoon of the 4th inst. the new first-class battleship *Danton* was successfully launched at Brest. The ship was to have been launched on the 23rd of May, but the attempt was, however, on that occasion unsuccessful, for after moving a distance of 144 feet she stopped on the slip and refused to move further, and although tugs were immediately attached to her, and every effort made to move her again, all was unavailing. Steps were immediately taken to shore her up and make her secure, and it is believed to have been very fortunate that she stopped where she did, as had she glided further she would have been partly unsupported and in a highly dangerous position. Foul play was at first suspected to have been at work, a belief for which there was some foundation, as on the day of the attempted launch the following paragraph appeared in the *Egalétaire*, a Brest Socialistic newspaper :—

> "This afternoon the *Danton*, destined to sow death (unless the Proletariat declines to submit to the experiment), is to be launched. But, it may be asked, will the *Danton* leave the slip? We shall know all about it towards five o'clock, if not earlier."

An enquiry into the mishap was of course held, and after it the Minister of Marine issued a memorandum stating that there was no ground at all for suspecting foul play, and the workmen in the yard are said to have been very indignant at the suggestion. The launching angle of the slip is comparatively small, and it is believed now that the cause of the first failure was due to this and to the ways being insufficiently greased. There was a very high tide on the afternoon of the 4th, and the ship then appears to have glided into the water without difficulty. Her launching weight was 6,500 tons.

The *Danton* is one of the six new large battleships of the so-called 1906-07 programme, and was laid down in February of last year. She is the fourth of the class to take the water; the *Voltaire*, building at the La Seyne yard, was launched on the 16th January, and the *Diderot* and the *Condorcet*, building at St. Nazaire, on the 19th and 20th April respectively. The displacement of these ships is 18,350 tons, and they are all to be fitted with Parsons turbines to develop 22,500-I.H.P., giving a speed of 20 knots. Unlike our *Dreadnoughts*, the armament of the French ships will consist of four 50-calibre 12-inch guns in pairs in turrets fore and aft, twelve 50-calibre 9·4-inch guns in pairs in six turrets, with sixteen 12-pounder and eight 3-pounder automatic guns and two submerged torpedo-tubes. Full details of these ships were given in the Naval Notes (France) in the February number of the JOURNAL.

The Training Ship "Bretagne."—The accommodation of the *Bretagne* training ship for boys, at Brest, has just been doubled by attaching to her as tender the second-class cruiser *Magellan*, which allows of the numbers being increased from 800 to about 1,600. The training of boys is becoming a matter of great importance to the French Navy, in view of the number of specialised ratings now required, and a new Decree has been issued dealing with the regulations for entry, by which the age limit has been extended from $15\frac{1}{2}$ to $15\frac{11}{12}$ years, so as to give a wider range for recruiting. The designation of the training ship has also been changed from *Ecole des Mousses* to *Ecole des Apprentis Marins et des Mousses*, and as soon as the boys attain the age of 16 they will be required to engage for a term of years, and will be rated *Apprentis Marins*.—*La Vie Maritime* and *Le Temps*.

France.

Précis of M. Chaumet's Report on the Naval Estimates: Suggested Economies.—Continuing his argument as to whether the best use is being made of the money voted for the services of the fleet, M. Chaumet asks whether it is necessary for France, with her reduced fleet, to maintain five naval ports when England has only three of the first importance, and he strongly advocates the suppression of the dockyards at Rochefort and Lorient. The Minister of Marine, however, although agreeing to certain reductions, would not assent to their complete suppression, in view of the Report of the Extra-Parliamentary Committee of Enquiry, which sat in 1894 and unanimously pronounced in favour of the retention of these dockyards. It was pointed out that in the event of war with England, which would necessarily be a *guerre de course*, the French cruisers would need a *point d'appui*, and while Brest and Cherbourg would certainly be blockaded, Rochefort, with three different channels leading to it, would be extremely difficult to blockade, and was the natural base from which the protection of the mouth of the Gironde, the Bordeaux trade, as well as that issuing from or entering the other western seaports, would be assured. Against this view, M. Chaumet points out that several distinguished naval officers now hold strongly that extensive works must be carried out if these ports are to be made available for the fleet, since, certainly as far as Rochefort is concerned, large battleships and cruisers cannot safely enter the Roads of Isle d'Aix or the Trousses, and as they could not ascend the river to the present yard, they could neither be docked nor repaired unless a new yard is constructed at the mouth of the Charente. Naturally, the inhabitants of both places are up in arms against any idea of these dockyards being abolished, and their cause has been warmly advocated by the Deputies who represent them in Parliament; but the question to be faced is, whether the funds available should be divided between five dockyards, the value of two of which is highly problematical, or whether these funds should be concentrated on the three dockyards of capital importance in the event of war, and on which a large expenditure to bring them up to date is urgently required. "If the Navy," writes Commandant Abeille, "is an instrument of war, then the second solution must be adopted; if, on the contrary, the Navy is maintained to satisfy special interests, why then the first." M. Chaumet estimates that the suppression of Lorient and Rochefort would result in a saving of 7 million francs (£280,000).

M. Chaumet then proceeds by means of tables to draw comparisons between the French fleet of to-day and those of England, Germany, the United States, and Japan. Taking Germany first, he draws attention to the gradual, methodical, and steady growth of her fleet. Other countries at the present time have only programmes looking a short way ahead. while from 1912 on their present amount of tonnage will decrease, old ships being eliminated, no provision being made as yet to replace them.

Germany, on the contrary, *knows what she wants and where she is going*. Her programme is laid out as far on as 1918 or 1920. As fast as old ships disappear, others replace them : new units are added. Thus the tonnage of German battleships rises from 244,000, at which it stands at the present time, to 571,00 in 1918, at which figure it is to be maintained. There is the same development in armoured cruisers : from 93,600 tons at the present time, the tonnage increases to 192,600 in 1916, in order to maintain it at 180,000 tons. Thus Germany's present intention is to possess in 1918 or 1919 a tonnage of battleships and armoured cruisers of not less than 750,000 tons. Her budgetary efforts are already settled with this object. By this clearness of foresight and her perseverance in action, Germany directs the naval movement. Her power is the unit with which all others have to be compared. She governs the building programme of every country obliged to rival her. If no unforeseen circumstance stops the progress of her ambition, the world will inevitably witness ten years hence a formidable increase of naval expenditure.

Coming next to England, M. Chaumet points out that England, even in 1910, will have a large superiority in tonnage over Germany, but that from 1912 on this superiority will diminish rapidly. M. Chaumet holds that if Great Britain is to maintain the two-Power standard, in view of the number of obsolete ships which will have to be struck off the list, she will have to expend on new battleship and armoured cruiser construction alone during the next ten years at least £100,000,000. In regard to the United States, she at present holds the second place, but by 1913 she will have to take third rank, unless her building programme is sensibly increased, as Germany will then take the second place. More especially must the United States increase her building programme if she intends to maintain the mastery of the Pacific against the Japanese.

Turning once more to his own country, M. Chaumet points out that although in 1910 the French total tonnage of battleships and armoured cruisers will still be superior to that of Germany, viz., 402,000 tons against 337,000, yet to remain even with Germany it will be necessary by 1918 to have 753,000 tons, or 350,000 more tonnage than to-day. To this increase must be added an additional 105,500 tons, representing obsolete ships which will disappear in the interval, making a total additional tonnage necessary of 455,000, representing a sum of nearly a milliard of francs (£40,000,000), or in other words, an annual increase in the cost for new construction of from 100 to 120 million francs (£4,000,000 to £4,800,000). "Is France in a position," he asks, "to make the necessary effort? There is certainly a consensus of opinion that we cannot without compromising our safety, allow our naval power to completely disappear. In any case, at least we must insist on obsolete ships being regularly replaced. For this it will be sufficient to devote to new battleships the money available after the completion of the programme of 1906." M. Chaumet further holds that instead of simultaneously laying down a larger number of ships, it will be far better to lay down a small number and complete them rapidly, by which means also a considerable saving in the cost will be effected.

He concludes by pointing out the necessity of having a clearly-defined naval policy. "The enemies of the Republic," he continues, "allege that our democracy are incapable of determining and carrying out that foresighted policy which can alone secure the restoration of our Navy to its proper position." But in view of the patriotism that has been shown in the reorganisation of the Army, in the securing a Colonial domain, which opens out a field of almost illimitable possibilities in the future, and the valuable alliances and friendships which the country has gained, M. Chaumet has full confidence that France will prove true to herself.—*Rapport par M. Charles Chaumet* (*Budget Général de l'Exercice, 1909, Ministère de la Marine*).

United States.

Report of the Secretary of the Navy for 1908.—The critics of our naval Bureaus and their work on naval construction will find small comfort in the annual report of the Secretary of the Navy, signed by "V. H. Metcalf"; but they can turn to the message of President Roosevelt for consolation.

Mr. Metcalf says: "While it is easy to criticise, it is exceedingly difficult to demonstrate the practicability of any scheme which would involve radical changes in the present departmental organisation. . . . The business of the Navy Department is so extensive and varied that its grand divisions must of necessity be under the immediate supervision of individuals having special qualifications and training which will fit them for their responsible duties."

He considers the Bureaus in their order, concluding that the Bureau of Navigation "must naturally be under the direct supervision of an officer of the highest attainments and large experience as seagoing officer"; the Bureau of Medicine and Surgery "must be under some official having unusually high attainments as a physician and surgeon"; the Bureau of Ordnance requires expert knowledge that makes it "a necessary and indispensable unit of the departmental organisation"; so with the Bureau of Construction and Repair and Steam Engineering. The Secretary says:—

"Under our system of Government all executive departments are presided over by a civilian, who is in turn directly responsible to the President; and the present Navy Department organisation, which was established more than sixty years ago, was based upon our fundamental system of Government, and was only adopted after a long and unsatisfactory trial of what was in effect a Board of Admiralty, namely, the Naval Commissioners. It may be claimed by some that the increase in the number of Bureaus from five to eight was unfortunate, but since the three new Bureaus were the Bureaus of Navigation, Equipment, and Steam Engineering, it is difficult to see how the Department could get along without at least one of these Bureaus—the Bureau of Navigation. The Bureau of Steam Engineering and the Bureau of Equipment were offshoots from the Bureau of Construction and Repair, and it is possible that a large part of the duties of these two Bureaus could be again consolidated with those of the Bureau of Construction and Repair, as was recommended by some of my predecessors. The whole question of Navy Department reorganisation is, however, exceedingly difficult and complex, and it may be that an entirely satisfactory solution is impossible. In other words, the Navy Department is not only a large business organisation, but is fundamentally an organisation which must make provision for the unknown contingencies of war, and to this extent can never be administered with a view solely to economy."

"They are in error, however, who assert that there is lack of co-ordination of effort in the Navy Department as at present organised, and consequent lack of co-operation in work performed and lack of direct responsibility for errors committed, since my personal experience as Secretary of the Navy convinces me that it would be difficult to find in any large manufacturing establishment or other industrial organisation a greater co-ordination of effort among the heads of large departments than there is now, and has been for some time past, among the heads of the great Bureaus of the Navy Department. I am therefore forced to conclude that, while the present Navy Department organisation may not

United States.

be an ideal arrangement from an economical standpoint, it is very far from being the irresponsible and impracticable organisation which its critics claim it to be; and, while a certain measure of consolidation of duties of the various Bureaus at navy yards and certain consolidations among the Bureaus themselves may hereafter prove desirable, the general principle of definite and explicit responsibility for the various classes of highly technical work under the several Bureaus is sound in theory and practice; that is, moreover, the basis of the organisation of every great industrial establishment, the Navy Department organisation being, of course, more complex in view of the peculiar duties which devolve upon such a military organisation."

The attention of the economists is called to the fact that a comparatively small percentage of the naval appropriation is devoted to the repair and maintenance of the *matériel* of the fleet, and that the Navy Department has been for many years past an exceedingly economical purchaser.

The carrying out of the plans and arrangements for the cruise of the Battle-ship Fleet without change of modification reflects great credit on the several Bureaus concerned, and particularly on the Bureaus of Steam Engineering, Equipment, Supplies and Accounts, and Construction and Repair. The prophecies as to the demoralised condition of the *matériel* after such a cruise have not come true. The ships have practically taken care of their own repairs during the voyage. The effect of the cruise upon the discipline of the men has been beneficial. Too much cannot be said of the magnificent conduct of the enlisted *personnel* during the voyage. The cruise has brought to the front the element of greatest strength in our Navy—the personal characteristics of the enlisted force. The tact, ability and mastership of their profession shown by the officers, from the lowest to the highest, is likewise worthy of earnest commendation. "Whatever may be said in technical criticism of the Navy, the people know as a result of the cruise that the vessels will float, that the officers and men can handle them, and that so far as the tests of peace can show, the ships and the men are fit in every particular for any duty.

There has been progress in the development of torpedo craft, both surface and submarine. The enthusiasm and zeal displayed by the officers and men of these craft point to real efficiency, and indicate that they will prove valuable auxiliaries to the Service in time of need. All Navies are now engaged in building battleships of large displacement and high speed, with main battery guns of the largest calibre. They are also building scouts or armoured cruisers, of displacements ranging from 3,500 to 5,000 tons, lightly armed but of very high speed, twenty-three to twenty-six knots, as well as torpedo craft, including destroyers and submarine. In torpedo craft the tendency to increase displacement and speed continues, and in the submarines which all countries are building the tendency here, too, is towards increase of size and speed. The rapidity with which vessels are built in England and Germany is noteworthy.

There are seven submarine torpedo-boats of an improved type now building under contract by the Electric Boat Company, and an agreement has been made with the Lake Torpedo Boat Company to accept for trial one of the Lake type, to be purchased if found satisfactory. Marked progress has been made in the rapidity of ship construction by shipbuilders of the country.

United States.

Recent criticism stirs the Secretary to dwell upon the method of adopting the plans for the *North Dakota* and *Delaware*. Designs were accepted from designers outside the Government, and a Board, of which five were seagoing officers, approved the plans prepared by the Board of Construction. In view of this exhaustive consideration given to the plan of those two ships, the Secretary feels no hesitation in saying that the designs of the *North Dakota* and *Delaware* are superior to those of any battle-ship now in course of construction for any other Navy.

Notable progress has been made in the year in marksmanship with guns of all calibres. The enthusiastic interest of officers and men has been stimulated by the present system of competitive target practice between individual guns and ships, leading to a marked increase in rapidity of hitting over former years and to important improvements in ordnance *matériel*. Improvements in powder and projectiles have been the chief features in the development of ordnance in the year.

The Medical Corps is congratulated on the character of the work performed in the twelve months. An appropriation of 135,000 dollars is recommended for completing and finishing the crypt of the chapel at Annapolis for the resting place of the body of John Paul Jones. The rehabilitation of the older naval hospitals has become necessary. Nearly 2,000,000 dollars will be required to place the hospitals on a proper peacetime basis. Noteworthy work has been done at the naval sanitorium at Las Animas, Colo. Other hospital work projected includes hospitals at Hawaii, Guantanamo, Samoa, Guam, San Juan, and Charleston, S.C., and the enlargement and renovation of the hospital at Pensacola, the only naval hospital on the Gulf.

The report sees no reason why the Pay Corps should be the only seagoing corps in the Navy to which the privilege is denied of promotion to the next higher grade three years after the date of first commission, and a change in this direction is recommended. Of the allotment of 151,000 dollars for the use of the Navy at the Jamestown Exposition, there is an unexpended balance of 62,303 dollars. Under the new system of Navy mail clerks, it is believed mail matter addressed to or sent from vessels of the Navy will be handled more safely and quickly. The Naval Young Men's Christian Association has continued to do good work for the enlisted men of the Navy and Marine Corps. The total amount of money invested in the association property and endowment funds, actual or pledged, is nearly 1,750,000 dollars.

There were 6,829 summary courts-martial. A change is urged in the present law to the effect that the entire sentence of a summary court shall go into effect at once upon approval of the C.I.C., or in his absence by the senior officer present. At least two officers of the rank of vice-admiral should be in the Navy. The pay of these should be the pay of the senior nine admirals. If there is objection to increasing the number of officers of high rank, the number of rear-admirals can be reduced by two.

The immediate development of a naval base at Pearl Harbour, H.I., is a matter of high importance. The troubles at the New York Navy Yard in the building of the new dry dock have at last been mastered, and the work should be completed in a reasonable time. The dock at Mare Island, Cal., should be in operation early in the coming year. Though the dock at Philadelphia has not been accepted, owing to difficulty with the machinery, it has been in practical use for more than a year. The floating dry dock *Dewey*, now at Olongapo, P.I., has proved very useful, and has saved large sums for dockage. The new dock at Norfolk should be ready for operation this month, and the one at Charleston about the beginning of February. The recommendations of the General Board, that repair and refitting work on naval ships should be concentrated in the large navy yards, and that the smaller ones should be done away with as opportunity presents, is concurred in. The improvement of the approaches to Portsmouth, Norfolk, and Mare Island enable battle-ships and armoured cruisers to reach those yards. Purchase or construction of a dry dock at San Francisco is recommended.

The report of the Board on the improvement of the approach to Mare Island will be laid before Congress. The work and duties of the different Bureaus are gone over to prove the necessity for separate existence. The Secretary points out that the Navy has for many years been an exceedingly economical purchaser, this being in answer to the oft-repeated accusation that the millions spent annually for the Navy are due to lack of economical administration. Further economy can be effected by making changes in the organisation of the manufacturing departments of the yards, and tentative changes with that end in view are now in course of trial.

This is the building programme for the coming year of the General Board, in which the Department concurs : Four battle-ships, four scout cruisers, ten destroyers, four submarines, three colliers, one repair ship, one ammunition ship, and two mine-laying ships. For the last two, two cruisers will be converted. The report holds that the scout cruisers should number one for each battle-ship, and should be of the *Salem* type.

The Secretary publishes the table given below, which gives the latest information on the subject of the relative strength of the Navies of the world, showing that our own Navy holds third place. The total tonnage of the war-ships of the eight nations named is 4,455,428, as follows :—

Great Britain, 1,669,005; United States, 685,426; France, 628,882; Germany, 524,573; Japan, 371,891; Russia, 240,943; Italy, 220,458; Austria, 114,250. The total when vessels now building are completed will be 5,334,502, as follows: Great Britain, 1,871,176; France, 801,188; United States, 770,468; Germany, 693,599; Japan, 444,903, Russia, 320,040; Italy, 284,778; Austria, 148,350. The following vessels are not included in the tables : Those over twenty years old, unless they have been reconstructed and re-armed since 1900. Those not actually begun, although authorised. Transports, colliers, repair-ships, torpedo depôt ships, converted merchant vessels, or yachts. Vessels of less than 1,000 tons, except torpedo craft. Torpedo craft of less than 50 tons.

Another table gives the *personnel* of the five leading Navies :—

Rank.	England.	France.	Germany.	Japan.	U. States.
Flag officers	96	45	33	53	18
Capts. and comdrs.	610	355	258	259	182
Other line officers and engrs.	3,268	1,802	1,719	1,798	795
Medical officers	501	377	210	318	296
Pay officers	571	201	205	277	201
Warrant officers	1,987	1,793	2,036	1.404	604
Enlisted men	99,319	44,577	47.286	41,966	42,400
Marine officers	520	—	103	—	268
Enlisted men (marines) ...	17,844	—	1,365	—	9,293

War-ship tonnage of the principal naval powers, number and displacement of war ships, built and building, of 1,000 or more tons, and of torpedo craft of more than 50 tons—November 1, 1908.

Type of Vessel.	Great Britain.				France.				United States.				Germany.			
	Built.		Building.		Built.		Building.		Built.		Building.		Built.		Building.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Battle-ships, first-class (*a*)	52	753,650	6	113,550	18	227,420	6	110,100	25	334,146	4	72,000	22	256,067	6	97,964
Coast-defence vessels (*b*)	—	—	—	—	11	65,800	—	—	11	45,334	—	—	8	32,378	—	—
Armoured cruisers	35	419,250	3	49,100	21	192,982	2	28,000	12	157,445	—	—	8	78,693	2	35,200
Cruisers above 6,000 tons (*c*)	18	176,250	—	—	3	24,409	—	—	5	43,800	—	—	—	—	—	—
Cruisers 6,000 to 3,000 tons (*c*) ...	43	191,130	2	6,650	13	52,549	—	—	20	72,620	—	—	20	82,363	6	21,672
Cruisers 3,000 to 1,000 tons (*c*) ...	25	53,505	—	—	10	20,540	—	—	14	18,058	—	—	17	37,626	—	—
Torpedo-boat destroyers	144	55,500	*d*23	21,491	44	13,724	*d*28	12,950	16	6,690	*d*15	10,900	64	29,447	*d*21	13,470
Torpedo-boats	48	8,182	23	6,180	256	24,206	10	970	32	5,615	—	—	42	7,639	—	—
Submarines	44	11,538	16	5,200	44	7,252	50	20,286	12	1,718	7	2,142	2	360	4	720
Total tons built & total tons building	—	1,669,005	—	202,171	—	628,882	—	172,805	—	685,426	—	85,042	—	524,573	—	169,026
Total tons built and building ...	1,871,176				801,188				770,468				693,599			

Type of Vessel.	Japan.				Russia.				Italy.				Austria.			
	Built.		Building.		Built.		Building.		Built.		Building.		Built.		Building.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Battle-ships, first-class (*a*)	11	152,548	2	38,950	5	62,600	4	58,600	11	143,054	2	24,850	3	31,800	2	29,000
Coast-defence vessels (*b*)	3	18,786	—	—	4	21,380	—	—	—	—	—	—	6	41,700	—	—
Armoured cruisers	11	108,900	2	29,200	5	54,200	2	16,000	6	39,200	4	39,320	3	18,800	—	—
Cruisers above 6,000 tons (*c*)	2	13,130	—	—	7	46,460	—	—	—	—	—	—	—	—	—	—
Cruisers 6,000 to 3,000 tons (*c*) ...	9	34,727	1	4,100	1	3,100	—	—	1	3,530	—	—	2	8,000	1	3,500
Cruisers 3,000 to 1,000 tons (*c*) ...	8	16,138	—	—	7	8,800	—	—	9	19,320	—	—	3	7,050	—	—
Torpedo-boat destroyers	55	19,824	2	762	93	33,834	4	2,420	17	5,593	—	—	6	2,400	—	—
Torpedo-boats	63	6,312	—	—	57	6,834	—	—	61	9,054	—	—	35	4,500	—	—
Submarines	10	1,526	—	—	25	3,735	6	2,077	5	707	1	150	—	—	6	1,600
Total tons built & total tons building	—	371,891	—	73,012	—	240,943	—	79,097	—	220,458	—	64,320	—	114,250	—	34,100
Total tons built and building ...	444,903				320,040				284,778				148,350			

---

a Battle-ships, first-class, are those of (about) 10,000 or more tons displacement. *b* Includes smaller battle-ships and monitors.

c All unarmoured warships of more than 1,000 tons are in this table classed according to displacement as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word "protected" has been omitted because all cruisers except the smallest and oldest now have protective decks.

d Of these England has recently placed contracts for 14, France for 7, United States for 10, and Germany for 12.

MILITARY NOTES.

Home. The following are the principal appointments which have been made :—

General—Sir Robert C. Low, G.C.B., to be Keeper of the Jewel House, Tower of London. Colonel—F. C. Carter, C.B., to Command 16th Infantry Brigade (6th Division, Irish Command), with temporary rank of Brigadier-General.

Territorial Force.—Colonels—H. Martin, C.B., to Command South Scottish Brigade (Lowland Division); W. Scott-Moncrieff to Command Lothian Brigade (Lowland Division).

Indian Army.—Major-Generals—Sir Alexander J. F. Reid, K.C.B., to be Colonel of the 29th Punjabis; Sir Arthur A. Barrett, K.C.B., to be Adjutant-General in India.

Presentation of Colours by the King to Territorial Units.—On the afternoon of Saturday, the 19th ult., His Majesty the King, on the East Lawn of Windsor Castle, in the presence of Her Majesty the Queen, the Prince and Princess of Wales, the Duke of Connaught, Prince Arthur of Connaught, and other Royal and distinguished personages, presented Guidons and Colours to units of the Territorial Force.

The detachments of the Territorial Force, in order of precedence, were formed up in three sides of a square, under the command of Colonel the Hon. C. E. Bingham, 1st Life Guards, and the representatives of the Brigade of Guards attending the parade, and the Colour parties of the Territorial Force, under the command of Lieut.-Colonel G. C. Nugent, Irish Guards, received His Majesty with a royal salute.

The consecration of the Colours was performed by the Right Rev. Bishop Taylor Smith (Chaplain-General to the Forces), assisted by other Chaplains representing the different religious denominations. The ceremony of presenting the Colours was then proceeded with, His Majesty placing his hand upon them in turn, and they were then handed to the officers of the Colour party. The Guidons and Colours then moved down the front of the representative detachments and took up position in front of their own detachments.

On the command the officers bearing the Guidons and Colours turned about and faced their detachments, when the troops saluted the Colours with a general salute. The Colours having been turned to the front, the troops gave a royal salute, and three cheers were then given for the King.

The following is a list of the Territorial units that received Guidons and Colours from the King :—

Yorkshire Dragoons, North Somerset Yeomanry, Hampshire Yeomanry, Herts Yeomanry, Montgomery Yeomanry, Lothian and Border Horse, Q.O.R. Glasgow Yeomanry, Sussex Yeomanry, 2nd County of London Yeomanry, Essex Yeomanry, 1st Scottish Horse, 2nd Scottish Horse, 7th Middlesex Regiment, 8th Middlesex Regiment, 5th East Surrey Regiment, 5th Notts and Derby Regiment, 6th Notts and Derby Regiment, 4th Oxford and Bucks Light Infantry, 4th Cheshire

Home.

Regiment, 5th Royal Sussex Regiment, 6th Royal Scots Regiment, 9th Royal Scots Regiment, 6th Essex Regiment, 5th Northumberland Fusiliers, 6th Northumberland Fusiliers, 7th Northumberland Fusiliers, 5th Argyll and Sutherland Highlanders, 6th Argyll and Sutherland Highlanders, 4th Northampton Regiment, 4th Dorset Regiment, 5th South Staffordshire Regiment, 6th South Staffordshire Regiment, 4th Royal Berkshire Regiment, 4th Gloucester Regiment, 6th Gloucester Regiment, Brecknock Battalion S.W. Borderers, 4th Suffolk Regiment, 5th Suffolk Regiment, 7th Argyll and Sutherland Highlanders, 8th Highland Light Infantry (Lanark), 4th East Kent Regiment, 4th Royal West Kent Regiment, 5th Royal West Kent Regiment, 5th Welsh Regiment, 6th Welsh Regiment, 7th Royal Welsh Fusiliers, 5th West Yorkshire Regiment, 6th West Yorkshire Regiment, 4th West Riding Regiment, 5th West Riding Regiment, 6th West Riding Regiment, 4th K.O. Yorkshire Light Infantry, 5th K.O. Yorkshire Light Infantry, 4th York and Lancaster Regiment, 5th York and Lancaster Regiment, 4th Leicester Regiment, 5th Leicester Regiment, 7th Royal Scots Regiment, 5th Gordon Highlanders, 4th King's Own Scottish Borderers, 2nd Monmouth Regiment, 3rd Monmouth Regiment, 4th Seaforth Highlanders, 7th Worcester Regiment, 8th Worcester Regiment, 4th Cameron Highlanders, 5th Royal Warwickshire Regiment, 6th Royal Warwickshire Regiment, 7th Royal Warwickshire Regiment, 8th Royal Warwickshire Regiment, 4th Lincolnshire Regiment, 5th Lincolnshire Regiment, 4th Royal Welsh Fusiliers, 5th Hants Regiment, 6th Hants Regiment, 7th Hants Regiment, 4th Somerset Light Infantry, 5th Somerset Light Infantry, 1st Cambridge Regiment, 1st City of London Battalion, 2nd City of London Battalion, 3rd City of London Battalion, 4th City of London Battalion, 7th City of London Battalion, 13th County of London Battalion, 14th County of London Battalion, 19th County of London Battalion, 23rd County of London Battalion, 24th County of London Battalion, 4th East Yorkshire Regiment, 1st Hertford Regiment, 5th King's Own Scottish Borderers, 6th Black Watch (Royal Highlanders), 5th Durham Light Infantry, 7th Durham Light Infantry, 8th Durham Light Infantry, 9th Durham Light Infantry, 4th Yorkshire Regiment, 5th Yorkshire Regiment, 5th Border Regiment, 1st Hereford Regiment, 7th Black Watch (Royal Highlanders), 6th Gordon Highlanders, 5th Royal Welsh Fusiliers, 5th Highland Light Infantry, 6th Highland Light Infantry, 7th Highland Light Infantry, 9th Highland Light Infantry.

Memorandum by the Army Council on the Existing Army System and on the Present State of the Military Forces in the United Kingdom.—In view of doubts which have lately been expressed in regard to the effective strength of the Regular Forces and their readiness for war, and with the desire of removing misunderstanding as to the purpose and effect of recent changes in organisation, the Army Council desire to place on record their views on the subject, and those of the Inspector-General of the Forces, as embodied in this memorandum and the annexes thereto.

The organisation of the Regular Army, with its Reserves, as it exists to-day, is based on the principles which guided the Localisation Committee of 1872. That Committee, which included Sir Patrick MacDougall, Colonel Garnet Wolseley, and Mr. Ralph Knox, approached the subject of Army organisation primarily from the war point of view, though they did not lose sight of the essential requirements of peace time. But their main thesis was the following: That the sole object of any military system in peace is to provide for a state of war, and the test of any peace organisation must be its power—

1st, To place in the field immediately on the outbreak of war, in the highest state of efficiency, as large a force as is possible within the limits of the approved peace military expenditure.

2nd, To maintain that force throughout the continuance of hostilities, undiminished in numbers and efficiency.

The means by which the Committee proposed to fulfil these objects are especially worthy of attention, inasmuch as it is evident that they were fully aware of certain shortcomings which have since been represented as fatal defects in the system which they inaugurated. They realise, for instance, that the Reserve produced under any terms of service which were possible, having regard to the maintenance of our foreign garrisons in peace, would only suffice, approximately, in the event of mobilisation, to raise the home battalions to war establishment. The fact, however, that the first of their objects, namely, the mobilisation of the home cadres, could, under their proposals, be effected without weakening or destroying other cadres represented in itself a great advance on anything which had obtained hitherto. The initial mobilisation of the battalions sent to the Crimea was only effected by drawing largely on battalions which did not form part of the Expeditionary Force.

Moreover, the Localisation Committee recognised that the second of their objects, namely, the maintenance in the field of an Expeditionary force could not, having due regard to peace military expenditure, be attained on a purely regular basis. They stated that this requirement would have to be met by utilising the Militia. "The completion of the expeditionary battalions to war strength," they reported, "forms the smallest part of the task imposed on the administrators of the Army. These battalions must afterwards be maintained in the field in undiminished numbers and efficiency. For the supply of war casualties the men of the Militia Reserve would form a valuable element. . . . The objection has been urged that Militia regiments would be deteriorated by the transfer of their best men to the Regular Army in the field, but the question for consideration is not what is best for the efficiency of this or that service taken alone, but what is best for the military interests of the nation, and whether it is preferable to send raw recruits from the plough to fill up gaps in the ranks of an army in the field, or to pass those raw recruits through the Militia mill first, and to take for the supply of war casualties Militiamen who would have acquired some notions of drill and discipline." It is quite clear from their report that the Committee contemplated the Militia becoming in time of war for all practical purposes part and parcel of the Line. Thus they recommended that during a war all enlistments should be for general service in the Line and Militia battalions of any brigade district. In other words, the Militia as draft-producing machinery for the Line in time of war formed an essential feature of what is known as the Cardwell system.

In spite of much adverse criticism, this system gradually assumed the shape that its originators intended. In 1891-2 it was subjected to searching enquiry by the Wantage Committee, both from the peace and from the war point of view. It was then distinctly stated in evidence that the system was not popular with Militia commanding officers, who were very jealous about any increase in the Militia Reserve; but in spite of this fact, the Cardwell system as a whole was upheld and endorsed by the Committee, who also recommended in their report that the Militia Reserve should be increased.

Prior to the outbreak of the South African War no organic changes in the Cardwell system were introduced, and under the operation of that system no less than 228,171 officers and men of the Regular Army were sent from home to South Africa between 1st August, 1899, and 31st May, 1902.

But one effect of the war was to intensify the discontent of Militia commanding officers with the *rôle* that had been assigned to them under this system.

In June, 1900, certain proposals regarding the Militia were laid before the Secretary of State, and amongst these proposals was one to abolish the Militia Reserve, which it was alleged was an institution detested by the whole force, with the possible exception of the members of the Reserve itself.

In September, 1900, the Commander-in-Chief, Lord Wolseley, expressed his disapproval of any such step. Not until the Reserve could furnish double the number of infantry Reserve soldiers that was forthcoming at the outbreak of the South African War would it be possible, in his opinion, to give any serious consideration to such a proposal.

In October, 1900, the Secretary of State decided to abolish the Militia Reserve, and enlistment was stopped for this force by Army Order in April, 1901. This departure from the system which had obtained since 1872 formed part of a far-reaching scheme of reorganisation, the chief feature of which was an attempt to render the Regular Army self-supporting in war by the formation of a large Reserve of men who were to be enlisted for three years' service with the colours and nine in the Reserve. By this means the necessity for retaining the Militia Reserve would, it was hoped, disappear, and the Militia would thus be left free to develop into a self-contained Second Line Army, untrammelled by the obligation of finding drafts in war for the Regular Army. It must be observed, however, that the release of the Militia from the position this force had held under the Cardwell system could only be justified on the assumption that the new terms of enlistment for the Regular Army proved successful, and this fact was not lost sight of by the military authorities.

As is well known, the new recruiting rules, *i.e.*, three year' colour service for all arms, introduced under Army Order 73 of 1902, did not answer. These rules could not have met our peace foreign service requirements unless about 75 per cent. of the men had extended their three years' colour engagement. The actual percentage of extensions in the infantry varied from 20·7 per cent. in 1903-04 to 36·53 per cent. in 1905-06. In other words, in spite of every effort that was made, the drafts required for the maintenance of our Indian and Colonial garrisons were not forthcoming.

To safeguard the drafts for garrisons abroad it became necessary to introduce provisionally a longer period of colour service, and under a Special Army Order dated 20th October, 1904, service in the infantry of the Line became nine years with the colours and three in the Reserve. Under these terms of service, unless it had been found possible to convert the Militia and part of the Regular Army into a short-service Home Army for Reserve-producing purposes, our position as regards mobilisation would rapidly have become worse than ever it had been since 1872. The Reserve that could be produced under a system of nine years' colour service and three years' Reserve service would barely suffice even to mobilise the home battalions, still less to maintain them in the field. The Militia Reserve had ceasd to exist, and Militia commanding officers objected as strongly as ever to this Reserve being reinstituted. Obviously the Regular Army could not be left permanently in such a position.

But after a trial with seven Line battalions towards the end of 1905, the administrative difficulties which presented themselves in placing the Militia and the requisite proportion of the Regular Army on a short-service and Reserve-producing basis so impressed the Army Council that in 1906 they decided to revert to the system originally introduced, or rather intended, by the Localisation Committee of 1872. The old terms of service of seven years with the colours and five with the Reserve have been restored for the Infantry, and under the provisions of the Territorial and Reserve Forces Act of 1907, the whole of the Militia, in the shape of a Special Reserve, has been brought into closer relations with the Regular Army. By means of the restoration of the old terms of service, the mobilisation of the infantry units at home is once more safeguarded, and owing to the affiliation of the Special Reserve to the Regular Army, the maintenance of the units in war for a period of six months at least is also assured. Further 74 Reserve battalions, whose main function it would be to train drafts for the battalions in the field, will by the new arrangement automatically come into being on mobilisation, and the unsatisfactory expedient of raising provisional battalions for this purpose, as happened during the South African War, will in future be avoided.

These Reserve battalions will also be utilised in the scheme for home defence; and in addition to them there are 27 extra Reserve battalions which will be available either for home defence or to reinforce over-sea garrisons or the army in the field.

In brief, the measures taken by the Army Council since 1905 have been directed to the maintenance of the fundamental principles of 1872 and to the organisation, on those principles, of the strongest expeditionary force which can be mobilised and maintained in the field within our existing resources in men and money, consistently with the obligation to maintain the over-sea garrisons. To this end the peace establishments of the several arms and units of the Regular Army and the Special Reserve, and the terms of service in each, have all been methodically adjusted to the production in peace of the drafts required for foreign service and in war of the men required to mobilise and maintain the field force in due proportion of the several arms. Establishments which, judged by this standard, were redundant have been reduced, while new organisations have been developed to strengthen the establishments which were deficient.

There are four tabulated appendices to the memorandum, comparing the forces available in 1905 and 1909 respectively. These, summarised, show the following results:—

——	1905.	1909.
1. Officers serving in the United Kingdom, liable for service abroad.	7,463	10,157
2. N.C.O.s and men serving in the United Kingdom liable for service abroad and available by age and service	185,823	265,515
3. Gross number of warrant officers, N.C.O.'s, and men serving at home, liable for service abroad.	222,683	329,592

——	1905.		1909.	
	Establishment.	Strength.	Establishment.	Strength.
4. *Personnel* liable for service in the United Kingdom	502,375	371,091	313,314	263,507

To this Memorandum was attached a Report by the Inspector-General of the Forces (General Sir John French), dated 12th November, 1908, of which the following is a *Précis* :—

General Report.—Speaking generally, the conclusion I have drawn, both from my observation and inspection of forces at home during the current year, is that our Field Army, as regards knowledge and training, is in a high state of efficiency, and well prepared to take the field at the shortest notice.

The musketry training of the Army is in a very satisfactory condition.

As regards the fire practice of Artillery, the standard reached appears to be quite satisfactory.

Cavalry.—I consider that the brigades are efficient and well led, and that they are fit, as brigades, for active service in the field. When working together as a division, however, the lack of control over the brigades, and the want of combination between them, convince me that the Cavalry Division has not yet reached that state of efficiency which is necessary to enable it to perform properly the duties which are required of it in war.

Infantry.—Although the company and battalion training witnessed this year was considered, on the whole, satisfactory, and attained to a very fair standard of efficiency, certain causes (some no doubt unavoidable) would appear to have prevented such training from being as progressive and continuous as is obviously intended by the Regulations and Training Manuals.

Special Reserve.—The Artillery special reservists are of a good type, and are progressing satisfactorily with their training. The Infantry special reservists vary a good deal in physique and are not, generally, up to the physical standard of the Artillery reservists.

Territorial Force.—During this year of transition I have thought it advisable to refrain from any complete inspection of the Territorial

Home.

Force. I therefore visited only the West Riding Territorial Division in its camp at Redcar. The result of this first inspection of a concentrated Territorial Division is, in the highest degree, satisfactory and most encouraging. The important point to notice is the extraordinary keenness, the desire to make progress, the zeal, and the energy displayed by all ranks from general to private.—*Standard.*

Austria-Hungary.

The Army Estimates for 1909.—The Army Estimates for the current year were voted by the Delegations as presented by the Common Minister of War for the Dual Monarchy, without modification.

The Ordinary Budget for the Common Army amounted to 322,609,197 crowns (£13,442,049), as compared to 306,552,435 crowns (£12,773,018) for 1908, showing an increase of 16,056,762 crowns (£669,031).

The Extraordinary Budget amounted to 12,366,730 crowns (£515,280), as compared with 13,378,729 crowns (£557,447) for 1908, showing a decrease of 1,011,999 crowns (£42,166). The Supplementary Estimates on account of the corps of occupation in Bosnia-Herzegovina amount to 8,127,000 crowns (£338,625), as against 7,868,000 crowns (£327,833) for 1908, showing an increase of 259,000 crowns (£10,791). The grand total amounts to 343,102,927 crowns (£14,295,955), as against 327,799,164 crowns (£13,658,298) for 1908, showing an increase of 15,303,763 crowns (£637,657).

The corresponding Budgetary effectives voted are as follows :—

Ordinary Budget.—Officers, 16,658; officials, 4,630; subaltern employés, 926; cadets and re-engaged non-commissioned officers, 18,162; non-commissioned officers and men, 264,507; horses, State, 60,612; officers, 10,316.

Extraordinary Budget.—Officers, 6; officials, 21; subaltern employés, none; cadets and re-engaged non-commissioned officers, none;; non-commissioned officers and soldiers, 3,690; horses, none.

Supplementary Corps of Occupation.—Officers, 178; officials, 268; subaltern employés, 51; cadets and re-engaged non-commissioned officers, none; non-commissioned officers and men, 3,235; horses, State, 1,667; officers, 139.

Making a total of 16,842 officers, a decrease of 29 as compared with 1908; 4,919 officials, an increase of 75; 977 subaltern employés, an increase of 29; 18,162 cadets and re-engaged non-commissioned officers, a decrease of 405 of the non-commissioned officers; non-commissioned officers and men, 271,432, an increase of 272. Horses, State, 62,279, a decrease of 584; to officers, 10,455, a decrease of 216.

Mobile Field Kitchens.—The Army, as has been announced to the Delegations, is to be supplied with field kitchens. According to the *Neue Freie Presse,* trials have reached an advanced stage, and the supply of these kitchens to the troops is now only a question of time.

The great advantage which these field kitchens offer is the relieving the men from the work of preparing their meals on their arrival in camp, and thus having them in a better state of readiness for fighting or security service duty. Moreover, under the present system, the late issue of rations often only allows of the men preparing their meal at night, although sometimes fighting has to be renewed with the daylight. It will be very different when the mobile kitchens are supplied, as they will provide the men with their mid-day meal on the march, and the evening one on arrival at camp, while the cooking of the food will be infinitely better than of old.

Several systems with one or more coppers have been experimented with by the Ministry of War—among others, one with three coppers submitted by the Ottakringer factory. A Norwegian copper for 25 men replaces the mobile kitchen for the mountain troops, the train, and the railway and telegraph companies.

The number of kitchens required will be about 4,000 (1 per company, squadron, battery, and hospital detachment). The cost will amount to 12,000,000 crowns (£500,000).

According to the same journal, orders have already been given to supply half the units of the Common Army and the *Landwehr;* the latter force has definitely decided to adopt the "Ottakringer," the cost of which is no higher than the others.—*Revue Militaire des Armées Etrangères.*

The New Military Governor of Bosnia-Herzegovina.—In view of the very strained political and military situation of the newly annexed provinces of Bosnia and Herzegovina, much interest has been shown in the appointment of a new Military Governor.

By an Imperial Decree of 7th March last, the former Governor, General of Cavalry Coler von Winzor, was recalled, the reason given being that the impending grant of a Constitution to the annexed country necessitated the Governor being in intimate relation with the population and their representatives, for which a good knowledge of the language was indispensable, which General Winzor did not possess. In recognition of his great services, however, the Emperor has conferred on him the rank of Freiherr (Baron), and he has been appointed Commandant of the Vth Army Corps (Pressburg).

The newly-appointed Governor of the annexed provinces is General of Infantry Varešanin von Vareš, recently Military Commandant of Dalmatia, who thus takes over the administration of Bosnia and Herzegovina, at a very critical time, both military and politically. Although he has never played a political *rôle*, the new Governor is well known as a particular friend of the Croats, to which race he belongs by birth, and makes no secret of his pride in his nationality. A few years ago he was made the object of violent attacks in the Hungarian Press, who complained of his supposed anti-Magyar tendencies; but there was no ground whatever for these attacks. During a long period of active service, both in Dalmatia and Bosnia-Herzegovina in extremely responsible posts, General Varešanin has acquired a perfect knowledge of the country and its inhabitants; their manners, their customs, their economic condition, the causes of their material wellbeing or their reverse are better known to him than others, because he has never feared to enter into close relations with all classes of the population, even the lowest. The XVth Army Corps and all the races of Bosnia and Herzegovina, with the exception perhaps of the Serbs, bear testimony to his cordial *bonhomie*. His great popularity, his charming personality, and his great tact in dealing with the native

Austria-Hungary.

population make it almost a certainty that he will succeed in reconciling all the incongruous, ethnical and religious elements.

Moreover, General Varešanin possesses the absolute confidence of his army corps, while his perfect knowledge of this mountainous and difficult country, which may not improbably be the future theatre of a war, will stand him in good stead. He has had the opportunity of appreciating those who would be his adversaries, and as Military Commandant of Dalmatia he has had many opportunities of showing that he can handle large masses of troops in unfavourable country in face of an enemy without wearying his men out. His long term of service in this country has also enabled him to familiarise himself with the modern tactics of the fleet and to become personally acquainted with its heads. This is a matter of some importance, because the defence of Bosnia, Herzegovina, and Dalmatia will call for close collaboration between the fleet and the Army. Thus, from both the military and political point of view, the general is the right man in the right place.

His successor in the post of Military Governor of Zara is Lieut.-General Fanta, lately commanding the 36th Infantry Division at Temesvar. —*Revue Militaire Suisse.*

New Howitzer for Mountain Service.—Up to the present time the mountain artillery has only consisted of field guns and howitzers mounted on narrow axle-treed carriages. This *matériel* was not satisfactory, especially from the fact that these howitzers, in spite of their narrow axletrees could not accompany the troops everywhere. In the high mountains, moreover, there are frequently places which escape the view, and cannot even be reached by indirect fire from the guns. Thus, even more than the field artillery, the mountain artillery has imperative need for more powerful howitzers—a need which, no matter what the cost may be, must be met as soon as possible.

The Technical Committee at Vienna has succeeded, after some years of experimenting, which have been carried out with various weapons submitted by the Skoda Gun Factory at Pilsen and the Krupp firm at Essen, in obtaining a mountain howitzer which in a great measure comes up to the required conditions, and will be a valuable addition to the mountain artillery.

This new gun, which is called the 10-cm. (4-inch) mountain howitzer, model 8, is made of compressed bronze at the Skoda Works, and weighs 320 kg. (700 lbs.). The mounting is constructed in two pieces, which can be taken apart; it is not what is termed a recoil-mounting, but a number of technical special arrangements counter-balance this special point; moreover, no one has yet discovered a system of recoil carriage for mountain howitzers to which there are not some objections. This howitzer has a range of 5,000 metres for shrapnel and 6,000 for shell, wth a *maximum* elevation of 70° and 10° of depression; its rate of fire is 10 rounds a minute. It will be mounted on a carriage with a narrow axle-tree drawn by two mountain horses, driven tandem, the ammunition being carried in two-wheeled carts. There will be three kinds of projectiles employed, viz., shrapnel, common shell, and torpedo shell. To protect the men working the gun there is a steel shield 7-mm. (¼-inch) thick. The carriage is

Austria-Hungary.

fitted so that it can be placed on sledges if necessary at difficult parts of the road.

Four howitzers, with their munitions, provision and baggage carts, will form a battery. The military administration proposes to form in the sector of the XVth Army Corps at Serajewo, as has already been done in the Tyrol, special groupings of field howitzers.

Field Artillery Telephone Equipment.—The intention of the military authorities to supply the field artillery with a telephonic equipment has already been mentioned; this will be carried out, according to latest arrangements, as soon as the arming of the field artillery with the new carriage recoil gun is completed.

Every battery will have a wagon and telephone detachment supplied with 3 kilometres (3,280 yards) of wire and a station. In reserve with each regiment will be a further 10 kilometres (6¼ miles) of wire and another station, so that each regiment will have at its disposal 22 kilometres (13¾ miles) of wire and 5 stations.—*Revue Militaire Suisse* and *Revue d'Artillerie.*

Germany.

The Strength of the Officers' Corps.—The Officers' Corps on the 1st of April of this year consisted of 403 generals, 676 commandants of regiments, 2,312 staff officers, 6,425 captains and Rittmeister, 4,797 first lieutenants, and 10,946 lieutenants, making a total of 25,559 officers. Out of the 403 generals, 311 are Prussians, 51 Saxons, 15 Wurtembergers, 45 Bavarians, of whom 2 belong to the Military Tribunal of the Empire. Out of the 676 regimental commanders, 516 are Prussians, 51 Saxons, 27 Wurtembergers, 78 Bavarians, 4 of whom belong to the Supreme Military Tribunal. The 6,425 captains and Rittmeister are divided as follows: 4,998 are Prussians, 453 Saxons, 247 Wurtembergers, and 727 Bavarians; 3,732 first lieutenants are Prussians, 347 Saxons, 179 Wurtembergers, and 539 Bavarians. Of the lieutenants, 8,560 are Prussians, 791 Saxons, 401 Wurtembergers, and 1,194 Bavarians. In *résumé,* the four States mentioned contribute respectively a total number of 19,903, 1,837, 961, and 2,850 officers.

There are 2,282 military doctors, of whom 1,756 are Prussians, 168 Saxons, 89 Wurtembergers, and 269 Bavarians. Eighty-four of these are officers of the general staff and inspectors-general; the others are divided between the superior staffs, the staffs of units, and the units themselves.

The veterinary surgeons number 691, of whom 538 are Prussians, 53 Saxons, 27 Wurtembergers, and 73 Bavarians; and there are also 2,303 accountant officers.—*Revue Militaire Suisse.*

The Telephone and the Field Artillery.—According to the *Militärische-politische Korrespondenz,* the batteries and group staffs of the field artillery are now provided with the telephone. The employment of the telephone for the transmission of orders and reports during battle was announced as long ago as March, 1907; it has taken two years to provide an apparatus which, under the name of "military telephone for the telephone detachments of the field artillery (*Armee fernsprecher für die Fernsprechertrupps der feldartillerie*), appears to be quite satisfactory. Communication can be set up by means of a double wire or a single wire and an earth. The apparatus, etc., is carried by mounted men in a sort of haversack like that used by cavalry patrols for carrying homing pigeons. The telephone is in the first place to connect the battery commanders with their units, the fire-observers, and the group staff. If it works satisfactorily, communication can then be set up between the group staffs and the regimental staffs. All the units already furnished are to devote themselves to the instruction of the telephonists. It is expected that the infantry will also soon be supplied with telephone equipment, as the trials made on a large scale at the Imperial Manœuvres last year were very satisfactory.

The Instruction of the 22nd August, 1908, *for the Service of the "Train."*—The new Instruction for the service of the *Train* approved on the 22nd August, 1908, has recently been published; it replaces and abrogates a similar confidential Instruction which was issued in 1896, and which was never made public, and it usefully completes the general directions in the chapter of the Field Service Regulations dealing with the same subject. The following is a *résume* of the principal provisions:—

General.—"Every commanding officer must constantly keep in mind the great principle that the fitness of troops to fight can only be constantly maintained by supplies of all kinds being assured.

"It follows that officers and military employés, on whom falls the duty of maintaining supplies, must, without allowing themselves to be too closely tied by administrative limitations, largely use their own initiative to attain the object in view, which is to keep the troops in condition to fight."

Composition of the "Trains" of an Army Corps.—Apart from the fighting trains and regimental trains (*Bagagen*) which form an integral part of the staffs or of the army, the trains of army corps comprise :—

1. The ammunition columns under the orders of the commandant of the ammunition columns : four infantry and eight artillery ammunition columns (one of which is for the field howitzers), and in addition, if the army corps includes heavy artillery, eight foot artillery ammunition columns for heavy howitzers.

If the army corps, moreover, includes some mortar batteries, there will be in addition four foot artillery ammunition columns for the mortars.

2. The trains under the orders of the trains commandant.

   a. Two train battalions each comprising three subsistence supply columns (*Proviant-Kolonnen*) and three or four auxiliary wagon trains (*Fuhrpark-Kolonnen*), a remount establishment, and six field hospitals.

   b. Two field bakery columns.

   c. A bridging equipment.

The sanitary battalion, of which there is still some question in the regulations for the field sanitary service, is suppressed; in its place there are only the twelve field hospitals of the army corps and the three sanitary companies which form part of the divisions.

The Instruction next gives the composition of the ammunition columns and trains of the reserve division.

Germany.

The ammunition columns and trains are divided for the march into two *échelons.* The Instruction defines the duties and clearly lays down the respective positions of the commanders of the ammunition columns and trains, on the one hand, and of the leaders of the *échelons*, on the other. It is necessary particularly to note the new appointment of an officer superior to the commandant of the train.

Mobilisation.—The Instruction contains a certain number of very general provisions for the mobilisation of the ammunition columns and trains, naturally without entering into the detail of measures, which ought to remain secret. It indicates in particular the manner in which the different units are to be numbered, whether in each army corps or in conformity with a single series for the whole army, or on their assignment of the regiment charged to mobilise them.

Detailed Composition of the Units.—The Instruction gives the detailed composition in officers, men, horses, and vehicles of the units of every kind. There are two kinds of infantry ammunition columns having caissons drawn some by 6 some by 4 horses, 23 of the first, and 34 of the second. The field artillery ammunition columns have 21 caissons, the foot artillery columns 17; each of them is sub-divided into two demi-columns. The gas column for the balloonists has twelve 4-horse gas wagons. The sections of the subsistence supply convoys (*Proviant Kolonnen*) have 27 (old model) or 36 (new model) wagons drawn by 4 horses, and 36 2-horse wagons. The section of the auxiliary wagon train comprises 60 covered wagons.

The Instruction tables fix, moreover, for these units, as for all the other elements of the trains, the exact number of the cyclists and workmen of different professions who are to be attached to them, as well as the number of camp cooking utensils for common use (*Kameradschafts-Kochapparaten*) which are to form part of their *matériel.*

Marches, Cantonments, and Bivouac, Fighting.—The Instruction further gives detailed provisions for the order of march, the length of the columns, and the bivouac formations (with diagrams) of all the train units. On the other hand, in regard to their employment and the positions to be taken before, during, and after battle, it only gives very summary and very general provisions.—*Revue Militaire des Armées Etrangères.*

Roumania.

The Strategic Position of Roumania.—Certain of the German and Austrian military papers have been devoting a good deal of attention to the probability of a war sooner or later breaking out between the two allied Powers and Russia. Quite recently both *Danzer's Armee Zeitung* and the *Allgemeine Armee Korrespondenz* were discussing the best line of advance for Austria in the event of the contingency referred to, having regard to the frontier conditions of the two countries. *Danzer's Armee Zeitung*, which is one of the principal Austro-Hungarian military organs, and by no means friendly to Italy, with which country the possibility of a war is also contemplated, returns again to the subject, this time to point out the important strategic position held by Roumania owing to her geographical position. Lying on the east of the Austro-Hungarian Monarchy and between the northern and southern Slavs, Roumania, thanks to her excellent Army, can move against either Russia or the Balkan States, as the case might be. Roughly speaking, the Roumanian Army

Roumania.

would release five Austro-Hungarian army corps for use upon the Italian or Russian theatre of war. In order to make quite clear the full military value of Roumania, the writer proceeds to examine its position in regard to the Russian and Austro-Hungarian frontier territory, as well as the influence its mobile forces would have on operations in the Balkans.

As its contemporary in Berlin does, the *Armee Zeitung* holds that the Russian strategical concentration, having regard to the superior readiness for war of Germany and the Dual Monarchy, must, for the corps drawn from the north of the Poljesje, take place in the so-called Polish Trilateral, Warsaw-Ivangorod-Brest, and for the troops in South Russia, in the country adjacent to Kieff, Jitomir, and Berdischeff.

For the common offensive operations of the allies against Russia, the Polish Trilateral is the first objective. Unfortunately, the right flank of the lines of operation leading out of Galicia would be, the further the operations move to the northward, seriously threatened by an advance of the South Russian Corps by Kieff and the fortresses of Dubno-Rowno-Luck. This danger would become the more acute the longer the resistance of the Polish fortresses lasted. There can be no question of achieving any real success against the Russian army concentrated in the Trilateral unless the Austro-Hungarian army can occupy Dubno, Rowno, and Luck, so as to sufficiently secure its east flank and the rear of the army of operations.

The forces devoted to this duty would naturally not take part in the decisive actions of the main army; for practical purposes they would be lost. On the other hand, if the Roumanian army in Moldavia concentrated in readiness in the narrow tongue of territory which for some distance separates the Austro-Hungarian frontiers from the Russian, is entrusted with the duty by an offensive movement over Lipkany, Czernyi Ostrow into the country between Labun-Jitomir, of, in the first place, isolating the Volhynian Trilateral, and afterwards of covering the main operations, not only would a considerable accession of force have been secured for those operations, but the Russian reinforcements drawn from South Russia would be compelled, if they wished to reach Brest, to make a considerable detour either by Luninez (a little-used road) or by Minsk-Baranowitschi. It would be useless now to ponder over the further duties that might possibly devolve upon the Roumanian army in the further course of operations. The example we have given shows clearly enough of what extraordinary importance the Roumanian army would be in the case of war with Russia.

In the event of warlike complications in the Balkans, if Russia wished to take part, as she did in 1877-78 against Turkey, she could only pass her troops through the Roumanian territory, with its strong modern fortresses, at the cost of heavy fighting, while they would expose themselves to the further danger of being attacked by our troops debouching on their flank from the Carpathians. In view of this difficult situation, the Russians would be compelled to despatch the reinforcements for Bulgaria by sea to Varna.

Above all, we are justified in pointing out that the Roumanian Danube flotilla, in conjunction with ours, completely commands that river. This and the provisionally fortified bridge-head at Czernawoda enables the Roumanians to take the offensive against Bulgaria, and even against Servia, and there in the direction where most impression can be made to exercise a deciding influence upon the course of operations. By an offensive movement from Kalafat against Pirot, or from Corabia against Sophia, the Roumanian army can, in conjunction with troops advancing from South Hungary, owing to the advantages they both possess through their superior readiness for war, separate Servia from Bulgaria, or by an advance from the Dobrudska against Varna, or further against Tirnova-Sementi, paralyse any Bulgarian offensive movement against Turkey. The mere existence of the Roumanian army in this extremely favourable strategic situation will compel Bulgaria to take extraordinary measures in the rear of her army.

This brief sketch shows at least that the Roumanian alliance is a matter of the first importance, not only to Austria-Hungary, but also to Turkey, and so long as the Dual Monarchy is content to attach Roumania and Turkey to itself, the aspirations of the small Balkan States can never be realised. The object for which they are for ever striving can only be attained at the expense of Turkey and with the help of Russia and England. A recognition of this truth will teach the Young Turks, who hitherto have displayed a clear statesmanlike insight, in what direction their political friendships, for their own interests, will best lie.

The Roumanian Army can, as we have shown, take action either on the Russian or the eastern theatre of war. The true appreciation of its military value is for obvious reasons very necessary for us; details of organisation and bare figures are not of much use, but on the other hand, anything which throws light on the spirit that animates the troops, their discipline, and any special characteristics they may possess are of value, since many superficial observers have passed unfavourable criticisms upon them, which do not appear to be deserved.—*Danzer's Armee Zeitung.*

Reorganisation of the Field Artillery.—The field artillery has recently been reorganised. Each of the nine divisions and each of the four army corps had, up to the time of the recent changes, its field artillery regiment; but since the 1st of April of this year the regiments attached to the army corps have been suppressed, while the whole number of regiments of field artillery has been raised from 13 to 18, and each division has now attached to it a brigade of two regiments. In time of peace the battery is composed of the *personnel* and horses necessary for carrying out the battery firing exercises, so that the instruction of all the units can be completely and simultaneously carried out. There is no change in the group of horse artillery batteries, which remain as in the past under the direct orders of the commandant of the independent cavalry division. The mountain artillery also remains unchanged. The officers of the artillery celebrated the new organisation by a banquet held at the arsenal at Bucharest, the date chosen being the 28th of May, the anniversary of the day when the first shots were fired in the war of 1877 against the Turks.

The Budget and an Increase of the Infantry.—The Army Budget for 1909-10 amounts to 56,175,000 francs (£2,247,000), showing an increase of two million francs (£80,000) over that of last year. This increase has enabled the 9th Division to be completed by the creation of the 36th Regiment of Infantry and the 18th Infantry Brigade. The Army is thus now at its full strength of nine divisions, plus the independent cavalry division.

Roumania.

The One-year Volunteers.—For a long time past the recruiting regulations have permitted of a reduced term of active service for young men, who, coming up to a certain standard of education, serve only one year instead of the usual two or three. This one-year service has up to the present been carried out in the different regiments. Last year, at the commencement of the training, these young men were amalgamated in a special school, which was attached to one of the Chasseur battalions. This year the school has been given the benefit of a more complete organisation, responding better to its object, which is to prepare the young men belonging to this category for the rank of sub-lieutenant in the Reserve for all arms, as well as certain non-commissioned officers (*plutonieri*) who fulfil certain conditions for the rank of sub-lieutenant in the Active Army. This preparation partakes of a practical character, so that when they leave the school the pupils will be competent to take up the duties of their rank.—*Revue Militaire Suisse.*

NAVAL AND MILITARY CALENDAR.

JUNE, 1909.

4th	(F.)	50th Anniversary of the Battle of Magenta (Austrians defeated by the Allied French and Sardinians).
5th	(Sat.)	Presentation of Colours to 1st Batt. Norfolk Regiment by the King at Buckingham Palace.
,,	,,	Launch of 2nd Class cruiser *Köln* from the Germania Yard, Kiel, for Imperial German Navy.
9th	(W.)	H.M.S. *Superb* commissioned at Portsmouth.
12th	(Sat)	Review of Fleet at Spithead by Admiralty in presence of the Delegates to Imperial Press Conference.
,,	,,	Loss of Russian Submarine by collision with the battleship *Panteleimon* off Sebastopol.
17th	(Th.)	Mobilisation of Nucleus crew ships for Naval Manœuvres.
19th	(Sat.)	Presentation of Colours to 108 Territorial Units at Windsor Castle by H.M. the King.
24th	(Th.)	50th Anniversary of the Battle of Solferino (Austrians defeated by the Allied French and Sardinians).

FOREIGN PERIODICALS

NAVAL.

Argentine Republic. — *Boletín del Centro Naval.* Buenos Aires: February-March, 1909.—"New Refrigerating Machine." "New Instrument for Correcting Lateral Errors in Firing." "The South Coast." "To-day and To-morrow." "Squadron Firing." "Prize Firing in the English Navy."

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete der Seewesens.* No. 7. Pola: July, 1909.—"Battle Tactics of the Single Line (Lieut. Dewar, R.N.)" "A Contribution to the Question of the Warding-off of Torpedo Attacks by means of Guns." "The Explosion on board the Italian Submarine Boat *Foca.*" "U.S. Naval Estimates for the Financial Year, 31st May, 1909, to 30th June, 1910." "The Hopkinson Flash-Light Engine Indicator." "Turbine Propellers." "The New Regulations for the Italian Naval War School." "Supplementary Credit for the French Naval Estimates, 1908." "Comparative Trials between Submarine and Submersible Boats at Cherbourg." "Supplementary Credits for the Italian Naval Estimates, 1909-10."

BRAZIL.—*Revista Maritima Brazileira.* Rio de Janeiro: April, 1909.—"The Study of Foreign Languages in the Fleet." "A Lecture by Engineer-Constructor C. Laurenti, and Submarines." "Defence of Harbours and Coasts." "United States Battleships." "Model Naval Hospital." "The Brazilian Navy."

CHILI.—*Revista de Marina.* Valparaiso: March, 1909.—"Naval War Schools." "Mark Lights and Light Buoys for Channels." "The Climate of the Coast of Chili" (*continued*). "Floating Dock for the Bay of Callao." "The New Explosive Trotyl." "The German Submarine Salvage Ship." "Turbines in Ships of War." "Reform in the Supply of Ammunition for Guns."

FRANCE.—*Revue Maritime.* Paris: April, 1909.—"The Ship of War: An Administrative and Financial Study." "Some Indications on the Development and Actual Position of Submarines in Different Countries." "Protection of Ships of War against Torpedoes." "A Fair Basis Competition in Battle Practice."

La Marine Française. Paris: June, 1909.—"The Cost of Battleships" (*continued*). "Paris—New York, *viâ* Havre." "The State and the *Messageries Maritimes.*" "Submarine Manœuvres." "The Navy before Parliament." "Open Letter to M. Picard, Minister of Marine, by the Federation of the Officials of the Administrative *Personnel.*"

La Vie Maritime. Paris: 10th June, 1909.—"The New Types of Ships." "The Dupont Affair." "The New Italian Armoured Cruiser *Pisa.*" "The Attacks of Torpedo Boats and Submarines and Defence against them" (*concluded*). "The *Danton.*" "When will the Parliamentary Commission Finish?" 25th June.—"The Submarines." "*A propos* of the Circular of 1903." "The *Danton*: Official Reports on the Causes of the Failure to Launch Her." "The Torpedo Flotillas." "The Small Roadstead at Dakar."

Le Yacht. Paris: 5th June, 1909.—"Modern Navies." "Yachting Notes." "The Transport of Submarines." "Dredger No. 5 for the Port of Havre." 12th June.—"The Enquiry into the Navy." "Yachting Notes." "The English Battleship *Superb.*" 19th June.—"The Comparative Trials of Submarines." "Yachting Notes." "The Brazilian Destroyers of the *Para* Type." 26th June.—The *Messageries Maritimes* and the State." "Yachting Notes." "The English Scout *Boadicea.*"

Le Moniteur de la Flotte. Paris : 5th June, 1909.—"The Training of the Seamen." "Gun Pointers." "The Central Administration." "The Navy in Parliament." "The London Naval Conference." 12th June.—"The Superior Council of the Navy." "The Navy in Parliament." 19th June.—"What we have to Remember." "The Submarine Manœuvres at Cherbourg." "The Navy in Parliament." 26th June.—"A Gunnery Division." "The Navy in Parliament : The Estimates for 1910."

GERMANY.—*Marine Rundschau.* Berlin : July, 1909.—"21st June, 1909 : 50th Year of Service of Grand Admiral von Koester." "The Battle of Gabbard Sand, 12th June, 1653." "The Right of Capture, according to the Conclusions of the London Conference." "Young Seamen." "Of the Variable Stars." "The Red Cross in the Navy." "Georg von Neumayer's Work for the German Navy." "On *Dreadnoughts:* Their Fire Control System and Comparative Strength in the North Sea."

ITALY.—*Rivista Marittima.* Rome : April, 1909.—" Obituary : The Catastrophe on Board the *Foca.*" " Armour and Projectiles." " The Land Operations in the Combined Manœuvres with the Navy (1908)." " An American Naval Station in the Gulf of Spezia." " A Notice of the Most Recent Polar Expeditions." *Supplement.*—" The Budgets of Foreign Navies during the Last Four Years."

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon : April, 1909.—" Evil, and Remedies." " The Portuguese-German Mozambique Frontier " (*concluded*). " Colonial Problems " (*continued*). " The Origin of Great Britain."

Annaes do Club Militar Naval. Lisbon : May, 1909.—" The Instruction and Education of Officers of the Fleet." " Electric Engines." " Air Refrigerating Machines."

SPAIN.—*Revista General de Marina.* Madrid : June, 1909.—" Chart Table of Lieutenant A. Bolín y Cámara." " Something on Deviation." " Fire Control of Guns." " Physical Aptitude." " The Modern Marine." " On the Stability of Smokeless Powders."

UNITED STATES.—*Proceedings of the United States Naval Institute.* No. 2. Annapolis : June, 1909.—" The Navy and Coast Defence." " Some Remarks called forth by the able Essay of Pay-Inspector Mudd—and a Plea." " Protecting American Interests." " The Invention and Development of the Naval Telescope Sight." " American Admirals in the British Navy." " Through the Patagonian Channel and the Straits of Magellan." " Services of Commodore John Rodgers in the War of 1812 (1812-1815)." " The Torpedo Service of To-day and To-morrow." " Projectiles for Naval Guns." " The Baptism of Ships." " Notes on the Errors of Stadiometers." " To Find the Tactical Curves." " Notes Concerning the Visibility of Objects on a Clear, Dark Night at Sea."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 3rd June, 1909.—"The Bosnian Adventure." "The Artillery at Aspern." "The Roumanian Army." "Military Report from Japan." 10th June.—"Fifty Years Ago." "Notes by the Arch-Duke Albrecht on the Battle of Solferino." 17th June.—"The Hero of San Martino." "My Wound on the 24th June, 1859." "Recollections of the Campaign of 1859." "The Italian Victory at San Martino." "In the Intrenchment at Naviglio." "The Roving Command of Major von Appel." 24th June.—"Our Last Knight of Theresa." "In Expectation of an Austro-Hungarian Fleet Programme." "The Two-Power Standard." "And the Fortress Artillery?" "The Roumanian Army."

Streffleurs Militärische Zeitschrift. Vienna: June, 1909.—"As a Kaiser-Hussar at Custozza, 1866." "The Reform Movement in Macedonia in the Years 1320-1324, 1904-1908." "The Question of Open or Concealed Positions." "The Events at Sea in the Russo-Japanese War from the Commencement of the War to the Beginning of May, 1904." "Tactical Views in Russia." "The Armed Forces of Crete."

Kavalleristische Monatshefte. Vienna: June, 1909.—"The Cavalry at Aspern and Wagram." "Letters on the German Cavalry Instructions." "50th Anniversaries of Chiodino and Castel Venzago." "Observations on the Employment of the Cavalry in the German Kaiser Manœuvres on the 7th and 8th September, 1908." "The Bavarian Cavalry Regulations of a Hundred Years Ago." "Divisional Cavalry: Their Strength, Employment and Efficacy." "Cyphers." "The New Riding School at Paderborn." "Race Meetings." "The Remount Question in Switzerland." "The Fire Fight of the Cavalry: Two Tactical Problems by a K.u.K. Cavalry Officer."

BELGIUM. — *Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th May, 1909.—"The French Military Estimates for 1909" (*concluded*). "The Publication of Orders in Grand Units" (*continued*). "The Grand French Manœuvres in 1908." 31st May.—"The Publication of Orders in Grand Units" (*continued*). "The Grand French Manœuvres in 1908" (*continued*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st June, 1909.—"Impressions of an Officer of the Russian General Staff on the Manœuvres of the Centre, 1908." "The March on Vienna" (*continued*). "Some Ideas on the Instruction of a Regiment of Infantry" (*continued*). "The Command of Troops: Duty of the General Staff" (*continued*). "Reserve Officers" (*continued*). "The Railways in French West Africa." 15th June.—"Some Ideas on the Instruction of a Regiment of Infantry" (*concluded*). "Impressions of an Officer of the Russian General Staff on the Manœuvres of the Centre" (*concluded*). "Reserve Officers" (*concluded*). "In Morocco: The Struggle for Power." "Study on the Intellectual Orientation of Company Officers." "Automobilism from the Military Point of View" (*concluded*).

Revue d'Infanterie. Paris: May, 1909.—"The New Manœuvre Regulations of the Russian Infantry." "Study of the Methods of Battle of the German Army." "System of Communication in the Tactical Domain in View of the Combination of the Efforts of Troops of all Arms" (*concluded*). "The Realities of the Field of Battle" (*continued*) "Practical Range-finder." "An Apparatus Intended to Deaden the Report of a Rifle."

Revue de Cavalerie. Paris: May-June, 1909.—"The Cavalry Yesterday and To-day." "Seydlitz" (*continued*). "Our Cavalry in the Next War (General von Bernhardi)" (*continued*). "Proposed Organisation of Sections of Machine Guns carried on Horseback in the Algerian Cavalry." "The Order Book of a Regiment of Cavalry (15th Chasseurs), 1814-1815" (*concluded*). "The Cavalry Complaint Book." "A Point of View of the Evolution of Some Ideas in the Cavalry in the XIXth and beginning of the XXth Century." "The Cossacks at Borodino (1812)."

Revue d'Artillerie. Paris: March, 1909.—"Reorganisation of the Artillery" (*concluded*). "Brass Cartridges—Brass Bullets—Electrolytic Copper" (*continued*). "Maximum Danger Zone."

Revue Militaire Générale. Paris: May, 1909.—"Communications in Battle." "Strategical Studies" (*concluded*). "Our Artillery and the Lessons of the Last War." "Study on the Events of the 16th August, 1870" (*concluded*).

Le Spectateur Militaire. Paris: 1st June, 1909.—"The Conscription of the Native Mussulmans in Algeria." "Journal of the Marches and Battles of the Infantry Regiment of Anjou, during the War of the Austrian Succession" (*continued*). "Service or Servitude" (*continued*). "Discipline, Crime, Military Justice" (*continued*). "Covering Manœuvres." 15th June.—"The Conscription of the Native Mussulmans in Algeria" (*continued*). "Discipline, Crime, Military Justice" (*continued*). "Journal of the Marches and Battles of the Infantry Regiment of Anjou, during the War of the Austrian Succession" (*continued*). "Service or Servitude" (*continued*). "Covering Manœuvres" (*continued*).

Revue d'Histoire. Paris: June, 1909.—"The *Rôle* of Pichegru at Mannheim (September, 1795)." "The Services at the Rear of the Grand Army in 1806-07." "The Second Passage of the Danube (4th-5th July, 1809)." "The War of 1870-71: The National Defence in the Provinces." "Military Justice in the Army of the Rhine and the Army of the Rhine-and-Moselle, 1792-1796." "Unpublished Letters of Napoleon I." "Unpublished Letter Dictated by Napoleon I. at St. Helena, 15th October, 1818."

Revue Militaire des Armées Etrangères. Paris: June, 1909.—"The Russo-Japanese War" (*continued*). "The Turkish Army in 1909." "The New Regulations for the German Foot Artillery."

GERMANY.—*Militär-Wochenblatt.* Berlin: 3rd June, 1909.—"A Burning Question of the Day?" "On the Tactical Demonstrative." "On the Kokotović Sight." "New Regulations for Entry into the Roumanian Higher War Schools." 5th June.—"The Battle of Düppel-Rübel, 28th of May, 1848." "On the Tactical Demonstrative" (*concluded*).

"Tattoo." "Exercises at War Strength." 8th June.—"The French Army." "Two Hundred and Fifty Years Ago." "The Elector Frederick William of Brandenburg in Jutland, 1865-9." "The Capture of the Fortress of Friedrichsöde and the Passage to the Fanoe Island by Fünen, 9th-11th, June, 1659." "The Battle of Düppel-Rübel on 28th May, 1848" (*concluded*). 10th June.—"Two Hundred and Fifty Years Ago" (*continued*). "Hermann Habenicht, a German Cartographer." "On the Brazilian Army." 12th June.—"Two Royal Saxon Infantry Regiments during their Two Hundred Years' Existence." "The Development of the Motor Airship, its Importance for Army and Fleet." "Two Hundred and Fifty Years Ago" (*concluded*). "Training of the Field Artillery Reservists at Jüterbog." 15th June.—"Ethical Education and Self-Education in the Army." "The Remounting and Training of the Swiss Cavalry." "The Development of the Airship, its Importance for the Army and Fleet" (*concluded*). "The Year's Report of the Chief of the Engineers of the U.S. Army." 17th June.—"The Commanding Generals of the German Army from 1889 to 1909." "The Battle Organisation of the Infantry." "Active Troops of the Second Line in Italy." 19th June.—"Observations on the New Cavalry Drill Regulations." "Opinions on the Training of Infantry for Outpost Duty." "The New French Commissariat Regulation." 22nd June.—"The Night Exercises of Infantry." "Albania." "Observations on the New Cavalry Drill Regulations" (*concluded*). "News from the Russian Army." 24th June.—"Prince Karl Günther von Schwarzburg-Sondershausen, Chief of the 3rd Thuringian Infantry Regiment No. 71." "History of the Electoral Bavarian Army under Karl Albrecht and Max III., 1726-1777." "Albania" (*concluded*). 26th June.—"Military Training of Youth." "In Remembrance of the Reorganisation a Hundred Years Ago of the Prussian Artillery." "German and French Cavalry Tactics." 29th June.—"On the British Army." "The Days of Poltava." "Military Training of Youth" (*concluded*). "What Steps is Switzerland taking to Provide Horses for the Artillery?"

Artilleristiche Monatshefte. Berlin: June, 1909.—"Ballistic Remarks." "Some Remarks on the Shooting Regulations of the Field Artillery in their Application to the Battlefield." "The Practical Value of the Artillery Lessons, 1904-05." "On the Shooting of the French Field Artillery." "Thoughts on the Training of the Field Artillery and its Employment during the Manœuvres." "More Light Field Howitzers.' "Observations on the Future Form of Fortress War." "Shooting of Field Artillery in the Darkness." "Foot Artillery Considerations, No. 17."

Jahrbücher für die Deutsche Armee und Marine. Berlin: June, 1909.—"New French Tactics." "Genius of a Commander of an Army and Luck." "Maxims for the Arrangement of Manœuvres." "Training of the People and Armed Strength." "Criticism of the Kaiser Manœuvres of 1908 by the French General Staff." "Fifty Years Ago."

Internationale Revue über die Gesamten Armeen und Flotten. Dresden: June, 1909.—"Military and Naval Intelligence of Austria-Hungary, Belgium, Bulgaria, France, Germany, Italy." *French Supplement No. 123.*—"The *Rôle* of the Russian Cavalry in May and June, 1904." "The Protection of Trans-Siberia during the Russo-Japanese War."

Italy.—*Rivista di Artiglieria e Genio.* Rome: March, 1909.—"On Artillery *Matériel* with Differential Recoil." "Types of Structures Proposed for Regions Liable to Earthquake." "The Engineer Arm in Fortress Warfare." "Lathes Fitted with the "Automatic Revolving Tool Holder.""

Rivista Militare Italiana. Rome: 16th May, 1909.—"A Few Recapitulatory Notes on the Balkan Question." "About the Peace Conference" (*continued*). "Advanced Guards and their Duties." "The Formation and Work of a Provisional Mountain Battery at the Combined Naval and Military Manœuvres." "The Military Decadence of the Most Serene Republic of Venice" (*continued*). "A Plea for the Definite Settlement of the Problem of Our Non-Commissioned Officers." "Some Notes on Military Philosophy." "National Rifle Shooting and Military Preparation." "A Letter to the Editor." "General Criticisms on the Organisation of the Territory of a State."

Spain.—*Revista Técnica de Infantería y Caballería.* Madrid: 1st June, 1909.—"Marshal Soult in Portugal; Campaign of 1809" (*continued*). "Field Range-Finder" (*continued*). "Philosophic Reflections about War and Soldiers" (*continued*). "Examination of the French Frontier" (*continued*). "The New Tactics" (*continued*). "Mountain Artillery in Peace and War." 15th June.—"Marshal Soult in Portugal: Campaign of 1809" (*continued*). "Field Range-Finder" (*continued*). "Philosophic Reflections about War and Soldiers" (*continued*). "Examination of the French Frontier" (*continued*). "The New Tactics" (*continued*). "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School in 1907" (*continued*).

Revista Científico-Militar y Bibliotéca Militar. Barcelona: 25th June, 1909.—"The Public and the Army." "The Battle of San-de-pu." "Our Military Literature." "Mines in Siege Warfare."

Switzerland.—*Revue Militaire Suisse.* Lausanne: June, 1909.—"Training Regulations for the Swiss Infantry." "The Schlayer Automobile Machine Gun." "The Service of the Train in Time of War." "The Sanitary Service of the First Line." "Our New Rifle."

United States.—*Journal of the Military Service Institution.* Governor's Island, New York: July-August, 1909.—"Combined Naval and Military Operations." "To Commemorate the Services of the Regular Army in the Gettysburg Campaign." "Preparation for Defence." "Subsisting our Field Army in Case of War with a First-class Power." "Instruction for Scouts of Foot Artillery." "Observations during a Leave of Absence in Europe." "Proposed Organisation of Machine Gun Companies." "Military Use of the Automobile." "Soccer Football." "Types and Traditions of the Old Army." "Comment and Criticism."

Journal of the United States Artillery. Fort Monroe, Virginia: May-June, 1909.—"The Location and Tactical Employment of Searchlights in Coast Defence."—"An Ex-Confederate's Views of National Defence." "Infantry Fire in Battle." "Fire Control Testing Set at Fort McKinley, Maine."

NOTICES OF BOOKS

The Battle of Wavre and Grouchy's Retreat. By W. HYDE KELLY, R.E.
London: John Murray.

The author has not been far wrong in stating of his very admirable little study that it deals with "an obscure part of the Waterloo campaign," for there are a very large number of officers in the Army who possess but a comparatively superficial knowledge of the operations herein described. The reasons given for the selection of this portion of the great campaign are all-sufficient, and soldiers will be grateful that Lieutenant Hyde Kelly was persuaded to expand the notes written for his own use into a book which must prove so interesting to his brother soldiers. The commencement of the war is briefly dealt with, but enough so to explain the reasons which prompted the selection of Grouchy for carrying out an operation of so vast importance, but in regard to the proper execution of which his limitations were very obvious. Never before had the Marshal exercised any really independent command, and no sooner had he received his appointment and the orders for his special mission than he began to question his instructions and to raise objections and difficulties. He was, however, practically the only man available. The Emperor had no alternative than to utilise his services; but his prospects of success in a difficult position—for which, moreover, he appears to have felt himself unfitted—were not improved by the jealousies of the subordinate commanders associated with him in the pursuit of the Prussians. How and where Grouchy found his enemy and the battle with Thielemann which resulted are described in detail, and full credit is given to the Prussian commander for the skill with which he held off the French during the critical hours of the afternoon and evening of the 18th June. From the close and well-reasoned account of Grouchy's retreat on Namur, and thence by devious ways upon Paris, is plainly to be seen how on more than one occasion his escape was due less to the excellence of his own arrangements than to the mistakes and hesitation of his pursuers, and students will feel that the author is right in not over-praising Grouchy's conduct of his retreat, which, although a skilful operation, can hardly be described as doing more than *somewhat* to retrieve his reputation as a general. Not the least important part of this book are the notes and comments to be found at the end; but indeed wherever throughout the author has given his own views and opinions, it will be conceded that his conclusions are eminently sound. Lieutenant Hyde Kelly's next military work will be sure of a cordial welcome.

The three maps supplied with this volume are clear, and well illustrate the operations described.

Recollections of a Life in the British Army. By General Sir RICHARD HARRISON, G.C.B., C.M.G. London: Smith, Elder & Co. 1908.

It is matter for sincere congratulation that General Sir Richard Harrison was persuaded to expand what was originally intended for purely family perusal into a volume which is certain to prove of real interest to the student of that period of military history contained within the latter portion of the nineteenth century. Sir Richard was so unfortunate as to be too late for the Crimean War, since he only landed at Scutari just as the armistice had been declared which resulted in peace; but he was lucky enough to be sent out to India on the outbreak of the Great Mutiny, landing in the country at the end of the year 1857, when the general situation had very materially improved. He was with Sir Colin Campbell at the final capture of Lucknow, during the hot weather campaign in Rohilcund, and in the final operations of the following cold weather in Oudh. General Harrison afterwards saw service in China under Sir Hope Grant, and then, returning to England, he was employed to the full in all the miscellaneous duties for which—more perhaps in those days than in more modern times—calls were made upon the officers of the Corps of Royal Engineers. He was also employed on special service connected with the inspection of fortifications, both in Canada and in the United States, and while travelling in the last-named country he was able to see something of the War of Secession, then at its height. Perhaps the most interesting of the General's "Recollections" are those wherein he recalls what he saw of the war in Zululand, where he was sent with the reinforcements hastily ordered thither when the news of the disaster at Isandlwana reached England. Sir Richard—then a Brevet Lieut.-Colonel—embarked in command of a company of Engineers, but on arrival at Durban he was appointed to the Headquarter Staff as Assistant Quartermaster-General. Also attached to the Staff of Lord Chelmsford was the young Prince Imperial, and a pathetic interest is attached to the complete story here told—perhaps for the first time in full detail—of all the tragic circumstances of the young Prince's last reconnaissance. At the time that he was killed some observations were made concerning General Harrison's connection with the circumstances of his death, but from what is now told it is very clear that every possible precaution was taken by Sir Richard, that the strictest orders had been issued regarding escorts, and that no possible blame or responsibility attached to any of the Staff for the lamentable and never-forgotten occurrence which moved England so deeply.

After the Zulu War had closed, General Harrison was appointed to the command of the troops in the Transvaal, and much that is here told of the events then pregnant with the future of that Colony will be new to the majority of our readers. From the time he reached home until the autumn of 1882 General Harrison was employed on the Staff at Aldershot; but when the Egyptian War began he was appointed Assistant Adjutant-General on the Line of Communications. Of the Nile Expedition he saw but little, being invalided from the front almost at its outset. As a Major-General, Sir Richard was Commandant of the Royal Military Academy, and also held the command of the Western District; his last appointment was Inspector-General of Fortifications.

It will be clear from the above that Sir Richard Harrison has seen a very great deal of war, and has done good work both as a Regimental and Staff Officer. Although the author of these "Recollections" writes mainly of his personal experiences, the book contains a large amount of important general matter, described with much literary skill, and illustrated by many interesting photographs; and this record of a particularly full, varied, and useful career is sure to be very welcome to the dwindling band of those who took part with Sir Richard Harrison in the scenes he so pleasantly and so modestly describes, as to that younger generation of soldiers who have had the privilege of serving under his command.

PRINCIPAL ADDITIONS TO LIBRARY DURING JUNE, 1909.

The Rise and Progress of the British Explosives Industry. 8vo. (Presented.) (Whittaker & Co.) London, 1909.

Les Armées du Rhin au début du Dirèctoire. (*Sambre-et-Meuse—Rhin-et-Moselle.*) Par le Capitaine H. BOURDEAU. *Publié sous la direction de la Section Historique de l'Etat-Major de l'Armée.* 8vo. (Henri Charles-Lavauzelle.) Paris, 1909.

A Manual of Signals for the Use of Signal Officers in the Field. By Brigadier-General A. J. MYER, U.S.A. 8vo. (Presented.) Washington, 1877.

Le Corps d'Observation des Alpes en 1815. By Le Capitaine HENNEQUIN. 8vo. 1s. 6d. (Henri Charles-Lavauzelle.) Paris, 1909.

Tsoushima. By Le Capitaine G. LAUR. 8vo. 2s. 6d. (Berger-Levrault et Cie.) Paris, 1909.

Etude sur la Campagne de 1859 en Italie. By Le Général F. SILVESTRE. 8vo. 2s. 6d. (Berger-Levrault et Cie.) Paris, 1909.

The French Conquest of Algeria. By Major G. B. LAURIE. 8vo. 6s. (Presented.) (Hugh Rees, Ltd.) London, 1909.

An Introduction to the History of Tactics, 1740-1905. By Captain A. F. BECKE. 8vo. 3s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1909.

Universal Service. By Colonel Sir C. M. Watson. Crown 8vo. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1909.

La Campagne de 1793 à l'Armée du Nord et des Ardennes. Par le Capitaine v. DUPUIS, *Publié sous la direction de la Section Historique de l'Armée.* 2 vols. 8vo. 18s. (R. Chapelot et Cie.) Paris, 1906-09.

Self-Government in Canada, and how it was Achieved: The Story of Lord Durham's Report. By F. BRADSHAW. 8vo. 3s. 6d. (Presented.) P. S. King & Son.) London, 1909.

Handbook 8. Maráthas and Dekhani Musalmáns. By Major R. M. Betham. 8vo. (Presented.) Calcutta, 1908.

The Passing of the Great Fleet. By H. F. Wyatt and L. G. H. Horton-Smith. 8vo. 8s. 6d. (Presented.) (Sampson Low, Marston & Co., Ltd.) London, 1909.

L'Artillerie de Campagne à tir rapide et à boucliers. By Le Capitaine J. Campana. 8vo. 5s. 8d. (Henri Charles-Lavauzelle.) Paris, 1909.

The Fijians: A Study of Decay of Custom. By Basil Thomson. 8vo. 10s. (William Heinemann.) London, 1908.

Nelson, and other Naval Studies. By J. R. Thursfield. 8vo. 12s. (John Murray.) London, 1909.

The Inniskilling Dragoons—The Records of an Old Heavy Cavalry Regiment. By Major E. S. Jackson. 8vo. 35s. (Arthur L. Humphreys.) London, 1909.

The Exile of St. Helena. By P. Gonnard. Translated from the French. 8vo. 10s. (William Heinemann.) London, 1909.

Turkey in Revolution. By C. R. Buxton. 8vo. 7s. 6d. (T. Fisher Unwin.) London, 1909.

Rasplata (The Reckoning). By Commander W. Semenoff. Translated by "L. A. B." 8vo. 10s. 6d. (John Murray.) London, 1909.

Three Years' Sport in Mozambique. By G. Vasse. Translated from the French by R. and H. M. Lydekker. 8vo. 8s. 6d. (Sir Isaac Pitman & Sons, Ltd.) London, 1909.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

APRIL, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

Continued from June JOURNAL, p. 844.

CONTENTS.

	PAGE.
Part II. Section I. Books	972
Part II. Section II. Magazine Articles	979
Part II. Section III. Books, Pamphlets, etc., which have been distributed to Reference Libraries	986
Abbreviations	987

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II. SECTION I. BOOKS (*continued*).

NOTE.—1. *When the price is not given in Part II., Section I., it is not known.*
2. *In Part II., Section I., books whose titles are given in foreign languages as well as in English, are published in those languages, and are not translated.*

ORGANIZATION AND ADMINISTRATION.

The Military Constitution of Germany (Deutsche Wehrverfassung). By Karl Endres. 133 pp. 12mo. Leipzig, 1908. Göschensche Verlag. 10d.

This book gives a concise summary of the laws regulating naval or military service in the German Empire. The first chapters explain how the present system developed, and gives an account of the military conventions between Prussia, on the one side, and Bavaria, Württemberg, Saxony, and the minor German States on the other. The majority of these conventions date from the period 1866-1871.

The next chapters deal with the obligations imposed on German subjects from the time when they first become liable to service until they are finally passed out of the *Landsturm*; the conditions under which the period of service may be either curtailed or postponed for a time; and the cases in which an exemption from service may be granted. The legal status and rights of persons undergoing military or naval service is also dealt with.

The last chapters deal with the special conditions created by mobilization, or a state of war; and the liabilities as regards service in the army or navy, of Germans who have become naturalized as subjects of a foreign Power.

The German Army in 1910 and the French Army after the recent Changes (L'armée allemande en 1910 et l'armée française d'après le projet du loi des cadres). By Capt. F. Culmann. 84 pp. 8vo. Paris, 1908. Berger-Levrault. 2/1.

The author compares the number of the different units of both armies, and notices particularly the numerical superiority of the Germans in cavalry and artillery.

He then sketches the principles of French and German organization, and the changes resulting from the new law regulating military establishments in France.

Comparison is made of the number of infantry battalions existing at different periods in France and Germany, and the steady continuity of German policy is contrasted with the constant changes in France.

Separate chapters deal in detail with the comparison of French and German infantry, cavalry, artillery, and the question of machine guns and pom-poms is then discussed.

The Army in Africa and the System of Two Years' Service (L'armée d'Afrique avec le service de deux ans). By General Luzeux. 57 pp. 8vo. Paris, 1908. Lavauzelle. 1/3.

This small book is divided into three chapters. The first deals with the situation as it is now, and the difficulties recently experienced in despatching a small number of troops to Morocco are pointed out.

In the second chapter compulsory service for natives is considered, and proposals are put forward regarding the difficulties arising from the absence of a census of the native tribes.

In the third chapter an estimate is made of the French troops necessary for the effective occupation of Algeria and Tunisia.

The Norwegian Army in the Field (Norska Armen i Falt). Official. 18 pp., with plates and sketches. 8vo. Stockholm, 1905. Norstedt.

This little book was published in Stockholm in 1905, when the relations between Norway and Sweden were much strained, owing to the secession of the former kingdom from the Union. The book gives a brief but clear description of the organization, establishments, tactics, and general characteristics of the Norwegian Army. There are several coloured plates showing the uniforms of the various corps, and a diagram showing the distances occupied by the units of a column on the line of march.

Copies of this book were distributed among the units of the Swedish Army.

The Supply Officer, his duties in the field and training in peace (Der Verpflegungsoffizier, sein Dienst im Felde und seine Vorbildung in Frieden). By Major-Gen. von Francois. 53 pp. 8vo. Berlin, 1909. Mittler. 1/3.

This is the third edition of this useful little book, and in it are embodied all the most recent instructions as regards supply from the "Field Service Regulations of 1908."

The characteristics necessary for a supply officer and his selection are discussed; the relationship between him and the officer commanding the troops is defined; and his duties during the mobilization period, during movement by train, in the concentration area and in the theatre of operations are broadly traced.

Matters concerning the use of field kitchens, loads of supply wagons, rations, forage, field bakeries and slaughtering of cattle are also entered into, and the last three pages are devoted to the question of training the supply officer in peace time.

Army Service Corps (Territorial Force) Guide. By Capt. J. Atkinson. 84 pp., with appendices. 8vo. London, 1908. Gale and Polden. 1/6.

A useful guide for officers and other ranks belonging to this branch of the Territorial Force. It contains information regarding appointment and enlistment, uniforms, promotion, training, pay, horse and stable management and various other miscellaneous matters. The appendices contain model orders for drivers when on duty, hygienic notes, forms required in a Territorial Army Service Corps Office, and books and forms required in a supply depôt.

The information is derived from various regulations and instructions and is presented in a handy form.

The Territorial Force. By Harold Baker. 298 pp. 8vo. London, 1909. Murray. 5/-.

After recounting the history of the evolution of the Territorial Force from the time of the Saxon Fyrd to the present day, the author, while pointing out that the official regulations must necessarily be the sole authority for matters of which they treat, presents here, in a compact and convenient form, full information of the principles of training command, and organization of the force, and of the provisions of the law, both civil and military, with regard thereto.

BOOKS OF REFERENCE.

Handbook for Army and Fleet (Handbuch für Heer und Flotte). Volume 1. Edited by Lieut.-General Georg von Alten. 911 pp., with numerous illustrations, plans, maps, and woodcuts in the text. 8vo. Berlin, 1909. Bong. 24/-.

A very useful and exhaustive military encyclopædia, from which a great deal of information is to be derived. In most cases the French and English equivalents for words or expressions are given. The English translations are perhaps a trifle literal in places, for instance, "Abwerfen von Geschossen aus Ballons und Luftschiffen" is rendered by, "Throw down bullets from the balloon."

As this first volume practically only deals with the letter A, the whole work promises to be colossal.

Maps of European Countries useful for Military Purposes (Die militärisch wichtigsten Kartenwerke der Europäischen Staaten). Extracted from "Mitteilungen des Militärgeographischen Institutes." 238 pp., with 11 plates.

This is a useful summary of the principal maps in use in the various countries of Europe. The title of the map is followed in each case by a short paragraph giving particulars as to scale, style of execution, date of first issue, and method adopted for indicating differences of level.

Armies and Navies of all Nations: their Composition and Distribution in 1908 (Les armées et les flottes militaires de tous les états du monde. Composition et répartition en 1908). The French translation of a German publication. 84 pp. 8vo. Paris, 1908. Berger-Levrault. 10d.

A handy little book, but not sufficiently accurate to be of any real value.

TRAVEL AND TOPOGRAPHICAL.

Servia and Montenegro (Serbien und Montenegro). By Captain Anton Schwarz. 35 pp., with 2 maps. 8vo. Laibach, 1909. Kleinmayr and Bamberg. 1/8.

A short compact description of these two States, with especial reference to their armed forces and geographical characteristics from a military point of view.

The Khanate of Bokhara and its Present Condition (Страна Безправія). By D. I. Logofet. 239 pp. 8vo. St. Petersburg, 1909. Berezovski. 2/8.

A useful handbook, containing much interesting information about a little-known Russian dependency which lies to the north of Afghanistan between the Oxus and the Central Asian Railway. The author served for many years with the Frontier Guard in Russian Turkistan and may, therefore, rightly lay claim to a considerable personal acquaintance with his subject.

The work is dedicated to the Imperial Duma, in the hope of drawing attention to the deplorably backward state of a country, the development of which would, in the opinion of the author, prove a strategic and commercial gain to Russia.

The main idea which pervades the book is that the Bokharan question must be looked upon from a military, and not from a diplomatic point of view. If such were the case, instead of purposely retarding development in order to retain Bokhara in the condition of a rotten dependency, with a costly but farcical army, the Russian Government would recognize the wisdom of adding another rich and strategically important province to her dominions, and would seek to turn it to advantage by developing the resources, improving the means of communication, and utilizing the three million inhabitants for strategic as well as commercial purposes.

The 21 chapters into which the work is divided deal with the history, administration, population, army, trade, resources, defences, and requirements of the Khanate.

The texts of various treaties and conventions are added in the form of appendices.

Round Afghanistan (Autour de l'Afghanistan). By Commandant de Bouillane de Lacoste with a Preface by M. Georges Leygues. 223 pp., with 120 illustrations and 5 maps. 4to. Paris, 1908. Hachette. 10/6.

The author, starting from Teheran in Persia, travelled completely round Afghanistan. In the course of his journey he passed through Russian Turkestan, Kashmir, the Punjab, Sind, Seistan and Persia, and although his experiences did not vary to any great extent from those of others who have visited these regions, the account of the route followed and the photographs with which the book is profusely illustrated, convey a graphic idea of the various countries and their inhabitants.

The preface to the book consists of an essay on the "Asiatic Problem." The writer briefly sketches the history of British and Russian influences in Central Asia from the seventeenth century to the present day; analyses the effects of the Russo-Japanese War upon Asia generally, and states his views regarding the position of the British in India.

In summing up the situation he states his conviction that Asia is awakening, and that throughout Persia, Afghanistan, Kashgaria and India a spirit of independence is beginning to show signs of life, which manifests itself in a growing hatred of foreigners and foreign institutions.

An appendix which contains "Notes on Baluchistan and the Seistan-Nushki Trade Route" discusses the question of a railway from India to Persia *viâ* Nushki.

Through Bush and Steppes from the Campo to the Shari (Durch Busch und Steppe vom Campo bis zum Shari). By Oscar Zimmermann. 238 pp., with numerous illustrations and one map. 8vo. Berlin, 1909. Mittler. 5/-.

The motive of the author is to describe his own experiences in the Cameroons and further to add a supplement to the history of the Protectorate Force. The Protectorate Force in the Cameroons was evolved from the previously existing Police Force. As Oscar Zimmermann was the only European who was present during the whole period of evolution, which lasted from 1892-1903—leaders and others constantly relieving each other—he has been repeatedly urged, he says, to narrate his experiences. Hence this work, in which are also contained descriptions of life in the Cameroons, the customs of the natives, and the author's views on the manner in which the natives should be treated, subjects which he considers necessary for a true appreciation of the remainder of the text.

Oscar Zimmermann only came back on leave three times for short periods between 1892 and 1903. The many expeditions undertaken by sections of the Protectorate Force are narrated in an interesting manner. The book is readably written throughout and the illustrations are admirable.

The last chapter deals with the expedition under Lieutenant Pavel to Lake Chad; which was the first one to reach that spot from the West Coast and lasted exactly one year.

Benadir (Il Benadir). By Vico Mantegazza. 363 pp., with 3 maps and numerous illustrations. 8vo. Milan, 1908. Treves. 4/2.

An interesting book giving useful details regarding the system of government, political relationship with Abyssinia, and recent encounters with native tribes. The chief towns and main geographical features are described, and the information is thoroughly up to date.

MISCELLANEOUS.

Texts of the Peace Conferences at the Hague, 1899 and 1907 Edited by James Brown Scott. 447 pp. 8vo. London, 1908. Ginn. 10/6.

A useful book for the student of International Law, each text being conveniently printed with its English translation in parallel columns. There is an exhaustive index, which greatly adds to the value of the edition.

The Laws of War and The Two Hague Conferences (1899-1907) (Les Lois de la Guerre et Les Deux Conférences de la Haye). By Paul Boidin 280 pp. 8vo. Paris, 1908. Pedone. 6/6.

This book is divided into two parts, the first dealing with the general scope and limit of the application of international law to hostilities in the field, the second giving a synopsis of the achievements of the two Hague Conferences. The author rightly insists upon the practical nature of his subject and urges that its study and development should be the care of those versed in the actual national and international dealings of mankind in peace a d war rather than of theoretical jurists whose possibly stupendous knowledge is acquired from the bookshelves of a library. The chapters dealing with the application of international law to those States which were not represented at the Hague Conferences are provocative of earnest consideration. The utility of M. Boidin's interesting book would have been enhanced by the addition of an index.

The Elements of International Law. By George B. Davis. Judge Advocate-General, U.S. Army. 673 pp. Crown 8vo. New York and London, 1908. Harper & Bros. 12/6.

A well-arranged handbook for the student of International Law, being, however, rather a clear exposition of past and present facts than a guide to future possibilities.

The principles of International Law are, like the principles of strategy, practically invariable, and have undergone no change since Grotius published the first authoritative treatise on the subject in 1625. The application of these principles, however, like the tactical application of the principles of strategy, is subject to a continual and accelerated change, and the student who is interested in its growth can have no better handbook than our author's careful analysis. The definitions given are clear, though occasionally rather concise than comprehensive. The reader will find his labours lightened, his interest enhanced, and his attention stimulated by an admirable Table of Contents, an exhaustive Index and copious references to authorities. The texts of International Agreements, whether those merely recommended or finally received, are conveniently relegated to appendices.

Modern Conflicts (Dans la Bataille). By Stéphen Pichon, Foreign Minister. 314 pp. 8vo. Paris, 1908. Méricant. 1/8.

This volume contains a selection of public speeches and articles by the French Foreign Minister, M. Pichon. Among the subjects dealt with are the following:—

Alsace-Lorraine before Europe, reprinted from the *Nouvelle Revue* of 1894.

The *rôle* of France in Morocco, being a speech delivered in the French Chamber last year.

The diplomacy of the Church under the Third Republic.
The liberty of the Press.
National dignity.
Pekin and the siege of the Legations.
The formation of the Italy of to-day.

Text Book of Ballistics. Vol. I. (Schiesswesen). By Rudolph Kuhn. 130 pp. 8vo. 2nd Edition. Vienna, 1908. Seidel. 4/-.

This work is designed to form a reference book and an aid to the study of the ballistics of every kind of firearm, large and small, in as short a compass as possible.

In Volume I. the movement of the projectile inside and outside the barrel is discussed, and sections are added treating with the theory of ballistics sufficiently to enable the student to understand the construction of guns, etc., and to estimate correctly their capabilities.

It will be shown in subsequent volumes by descriptions and illustrations of the various firearms adopted by the Great Powers how far, in the case of each State, its weapons fulfil theoretical requirements.

The whole work is arranged in volumes, each volume dealing with a separate subject and being complete in itself.

Organization and Fire of Small Arms (Organisation et tir des armes à feu portatives). By Captain-Commandant of Artillery Edm. Haesen. 255 pp. 8vo. Paris, 1908. Berger-Levrault. 5/3.

The author of this book is a Belgian officer who is a professor at the School of Application for Artillery and Engineer Officers. Chapter I. gives a history of the evolution of small arms commencing with the smooth bore, passing from that to the rifle muzzle-loader and thence to the rifled breech-loader and the repeating rifle. Chapter II., which consists of some 60 pages, is devoted entirely to ballistics, while in Chapter III. the various parts of the cartridge are described in detail. In the fourth Chapter the writer deals minutely with the various parts of the rifle and compares the breech mechanism of the Mauser, Mannlicher and Krag-Jorgensen systems. Chapter V. contains some notes on automatic pistols and a comparison between them and revolvers. The last pages of the book are devoted to a discussion of the value of collective fire, the vulnerability of various formations, etc. At the end of the book are a number of tables giving ballistic and other details with reference to the 1889 Belgian rifle and the Browning automatic pistol, now in use in the Belgian Army.

The Franco-British Condominium in the New Hebrides (Le Condominium Franco-Anglais des Nouvelles Hébrides). By N. Politis. 150 pp. 8vo. Paris, 1908. Pedone. 3/6.

This book deals with the Franco-British Convention of October, 1906, establishing a system of dual control over the archipelago of the New-Hebrides; the author is of opinion that the arrangement is satisfactory and will work well, especially from his point of view, as the Convention is decidedly favourable to French interests.

The Government of South Africa. Compiled by South African Officials. Two volumes. 467 pp. Vol. 1; 423 pp. Vol. 2 · with 8 maps and diagrams. 4to. South Africa, 1908. Central News Agency. 16/-.

The object of compiling this book was to educate the people of South Africa on the subject of Unification or Federation, and so to prepare the way for the Closer Union Convention. It has been arranged to supplement the information which the two volumes contain by publishing a monthly magazine.

Naval Administration and Warfare. By Captain A. T. Mahan, U.S.N. 409 pp., with map. 8vo. London, 1908. Sampson Low, Marston & Co. 7/6.

This volume comprises a number of essays which have appeared in various British and United States magazines during the last 20 years.

Though written on different subjects, and at wide intervals, they are connected by the thread of a plea for a broad policy of naval administration. The final essay is a temperate review of the gradual growth, and of the elasticity of the Monroe doctrine.

Financial Preparation for and Conduct of War (Finanzielle Kriegsbereitschaft und Kriegsführung). By Dr. J. Riesser. 104 pp. 8vo. Jena, 1909. Gustav Fischer. 2/5.

The author discusses the subject of finances in war under three main headings, namely:—Financial preparation for war, liquidation of finances for war purposes (Finanzielle Mobilmachung), and the financial conduct of war.

Under the first of these headings he discusses the probable cost of a future war. After reviewing the out payments made by Great Britain, France, Germany, Russia and Japan on account of the campaigns in South Africa, France (1870) and Manchuria, he estimates that a future war for Germany, on a basis of a mobilized force of 3,000,000 men, will cost her £900,000 per diem, or £324,000,000 per annum, and proceeds to investigate in detail the available capital in the Empire to meet this requirement. He calculates that £122,500,000 will be required during the first six weeks after declaration of war, and that to meet this demand floating money to the amount of £71,000,000 is available (including the famous £6,000,000 in gold in the Julius Tower at Spandau). The gold reserve of the Reichs Bank should, however, only be touched as a very last resort.

£138,000,000 might be covered altogether by an issue of banknotes, the Reichs Bank (besides the powers given to other banks) being empowered to issue notes to the extent of three times the value of the cash reserve (£41,000,000); and the amount of savings in the country could well guarantee an early expenditure of £175,000,000.

The author goes on to investigate the various means of taxation, *i.e.*, in order to find funds to carry on the war, and concludes that probably a third would have to be raised by new taxes, and two-thirds by the issue of Treasury bills and foreign loans.

In the course of his remarks he gives some interesting figures, together with references to authorities who have written on this most important subject. After stating that the cost of recent wars was, approximately:—

	£	£ per diem.
Franco-German War—		
To Germany	87,500,000	316.500
To France	76,480.000	312,000
Boer War, to England	211,256,000	220,000
Russo-Japanese War—		
To Russia	143,650,000	257,000
To Japan	121,400,000	217,000

He concludes that the next big land war will cost Germany probably 6s. per man under arms per diem. He does not take into consideration the fact that money spent on armaments and supplies in the home country does not represent a dead loss. His conclusion is that Germany, in spite of her present rather anxious financial position will be well able, chiefly by reason of the huge amount (£3,750,000,000) of valuable securities, foreign and otherwise, held in the country, to afford to carry on a big war by land. A great deal will, however, depend on the capacity of her financial authorities to gauge the state of the markets and that of her own credit; and here he calls attention to the German financial incapacity prevalent during the war of 1870, and contrasts it with the skill with which both British and Russian loans were placed during their recent wars. The author does not discuss at all the finance involved in a naval war.

German Colonial Legislation. (Die deutsche Kolonial-gesetzgebung). By Dr. Kobner and Gerstmeyer. 536 pp. 8vo. Berlin, 1908. Mittler. 12/-.

This work is a collection of all the laws, ordinances, edicts and international agreements which have reference to the German Protectorates. The first part contains such legislation as refers to the German Colonies collectively and in the second part the individual Protectorates are dealt with separately and in turn. There is a good table of contents at the beginning of the book and an alphabetical index at the end, by means of which reference is greatly facilitated.

The Productive Forces of France (Les forces productives de la France). By various authors. 250 pp. 8vo. Paris, 1909. Felix Alcan. 3/-.

This volume consists of a series of five lectures given at the " Société des anciens élèves de l'école libre des sciences politiques."

The subjects of the different lectures are as follows:—

Agricultural produce and social problems.
The concentration of industry, and its influence on the lot of working classes.
The merchant service, and its relation to the productive forces of France.
The organization of trade outside France, and her commercial agents.
The new forces developing in North Africa.

The author attributes the decline of France in the latter half of the 19th century from the proud position she at one time held as the foremost nation in Europe, from the point of view of productiveness and of social and political development, to two causes. The lack of cheap coal in France debars her from engaging in many industries which are carried on profitably in other countries more favourably situated in this respect, while an ever-diminishing birth-rate deprives her alike of soldiers and workmen, and has robbed the country of her former enthusiasm and spirit of enterprise.

The author works out in detail the productive value of the various industries of France, and in the final lecture sketches the early days of French colonisation and shows how the vacillation and weakness of her statesmen hampered her first efforts in this direction.

The ethnography of North Africa is dealt with, and the fact that the French have had to face no general rising is attributed to the number of different races and tribes into which the natives are divided. Allusion is made to the alarming number of foreign European residents in French North Africa.

The Evolution of the Army. Part II.—The Recruiting of the Army (L'armée évolue. II.—Le Recrutement de l'Armée). By General Pédoya. 275 pp. 8vo. Paris, 1908. Chapelot. 3/-.

This book is the second part of a series of works on the evolution of the French Army. The author formerly commanded the XVth Army Corps and is a somewhat prolific writer on military subjects.

The book opens with a description of the state of affairs which prevailed in France before the introduction of obligatory personal service, and shows how the idea of professional armies received its death blow in France from the disasters of 1870. The various recruiting laws from 1870 to 1889 are examined, and it is shown how the chief flaw in all these enactments was the same, namely, that a large number of men obtained exemption from military service. The introduction of two years' service, however, has rendered it absolutely necessary to abolish exemptions of all kinds; but there are still some difficulties in applying this law which the writer explains, at the same time showing the changes which have come into force under the new recruiting law.

General Pédoya shows, moreover, how, in order to reduce the number of Frenchmen serving abroad, the native contingents in the colonies have been considerably increased.

There are also chapters concerning the effect of the new law on cavalry training, and on the military education of the soldier generally. The book concludes with an examination of the proposal to have only one year's service, which is followed by a statement of the reasons why two years' service has been adopted in France.

Anglo-Chinese Commerce and Diplomacy. By A. J. Sargent. 332 pp., with diagrams. 8vo. Oxford, 1907. Clarendon Press. 12/6.

The object of the book is to describe the relations of Great Britain with China solely in their bearing on the interests of commerce. The details of political changes and military operations are neglected, it is therefore of little interest to military readers. More than threequarters of the book is occupied by a discussion of what is practically ancient history, and the vast changes which have taken place in China during the present decade are barely mentioned.

Trial of Officers Concerned in the Surrender of Port Arthur (Дѣло о Сдачѣ Крѣпости Порть-Артурь). By V. A. Apushkin. Supplement to the "Razvyedchik." 472 pp. 8vo. St. Petersburg, 1908.

A full account of the proceedings of the Court Martial on the principal officers concerned in the surrender of Port Arthur to the Japanese in 1904.

The Power Transport Vehicle, without Rails, from a Military Point of View (Der gleislose Kraftwagen in Militärischer Beleuchtung). By W. Stavenhagen. 204 pp., with 11 plates. 8vo. Oldenburg, 1908. Stalling. 3/6.

This book is described in the preface as a scientific treatise, in popular form, suitable for the study of officers of all arms, and for civilians conversant with military matters.

The contents are arranged in nine parts:—

Part I. is an introduction to the whole subject. Part II. describes the general principles of motor engines and the main characteristics of the different types of motor. The question of roads is discussed and some interesting figures are given for the coefficients of friction on various natures of roadway. This part concludes with some formulæ for the cost of running, tabulated according to speed, type of motor, and nature of the fuel employed.

Part III. is a history of the development of mechanical transport in various countries.

Part IV. deals with the employment of mechanical transport for military purposes. The history of some of the great campaigns from 1812 to 1905 is reviewed with a view to showing what great assistance an up-to-date mechanical transport train could have rendered in these wars.

The author then goes on to discuss the future of motor transport; he considers that motor cars and motor bicycles will be of use for reconnaissance during the period of mobilization, while mechanical transport trains will perform great service in relieving the strain on railways at certain points, and in carrying on the work of supply, towards the frontier, from the points beyond which it becomes unsafe to use the railways.

For purposes of coast defence motor transport will be exceptionally useful, since there is often no railway available to hurry troops to oppose a threatened landing.

In field operations the greatest service that motor transport can perform is, however, the shortening of the road spaces of the supply columns. On this subject the author gives us some interesting calculations.

It is, however, in siege warfare that the author expects the greatest advantage from mechanical transport. Esimates are given showing the number of tons of ammunition that will be expended daily by a modern siege train, a total far in excess of the capacity of the horse drawn vehicles available. Again, the materials for the construction of the siege batteries, which must be transported by night from railhead to the sites of the batteries, is estimated at 100 2-horse wagon-loads for one 4-gun battery. Hence for the construction of a line of batteries motor transport appears to be the only solution possible. It is suggested that motors on light rails should be used as tractors and that in this way 400 guns with their ammunition could be placed in battery in one night.

Part V. contains some useful tables and formulæ. Parts VI. and VII. are appendices. Part VIII. is a supplement relating the progress of mechanical transport in Germany and other countries from 1907 to 1908. Part IX. contains diagrams and photographs of military motor vehicles.

William II. (Wilhelm II.). By Adolph Stein. 124 pp. 8vo. Leipzig, 1909. Dieterichsche Verlagsbuchhandlung. 2/6.

The author adopts the *rôle* of champion to the Kaiser and endeavours throughout the book to show how, during the whole of the latter's 20 years' reign he has been misunderstood and maligned.

He draws a simile between the political situation in Germany in 1862 and the situation produced by the *Daily Telegraph* exposure in November of last year, but depicts William II. as standing alone against the Chancellor and Reichstag and not as was William I. supported by Bismarck.

The Kaiser is exonerated of the Kruger telegram, the high state of efficiency of the army is attributed to him, and his foresight in acquiring Heligoland is dwelt upon. He is painted as one of the most sagacious and level-headed monarchs ever known to history.

Dr. Jameson. By G. Seymour Fort. 312 pp., with 6 illustrations. 8vo. London, 1908. Hurst and Blackett. 10/6.

This is a most interesting account of the events that have, for the last 20 years, filled an exceptionally active and energetic career.

It was only in 1889 that Dr. Jameson, who had been practising in Kimberley since 1878, offered his services to his late friend and partner in Imperial interests, Mr. Cecil Rhodes, and undertook his most hazardous mission to Lobengula. Since then all his enterprises, with one well-known exception, have been crowned with success. Mr. Seymour Fort has brought clearly before us the patriotic and unselfish motives which have ever guided Dr. Jameson's actions, and in Chapter VI. the reader can glean for himself the reasons which forced him to undertake the raid at the time he did.

The Army Newspaper (*Weekly*). Pioneer Press, 13A, Cockspur Street. 1½d.

The object of this new periodical is to supply a need which has arisen with the spread of education in the Native Army in India.

It contains articles on military subjects suited to the rank and file, and may be of value to those who intend to return to India, to keep up their knowledge of the vernacular. It is at present printed in Urdu only, but, should a demand arise for an issue in the Nagri character, it is intended to meet it.

PART II.

SECTION II.

MAGAZINE ARTICLES.

(For abbreviations, *see* page 987.)

AERIAL NAVIGATION.

On the Action of Propellers and Aeroplanes. E., 1st January.

The Commercial Future of Flying Machines. Ec., 26th December.

The Voisin and the Wright Aeroplanes. E., 18th December.

The Problem of Flight. E., 18th December, 15th January, 12th February.

Some Anchored Tests of Aerial Propellers. By W. A. Scoble. E., 25th December.

Military Aerial Navigation in Germany. French General Staff. (To be continued.) R.M.E., December.

Airships. By Lieut.-Gen. v. Gortz. J.D.A.M., January.

On Dirigible Balloons. E., 5th March.

Progress in Aeronautics. By Major H. Bannerman Phillips. J.U.S.I., March.

Aerodonetics. By F. W. Lanchester. E., 19th and 26th February.

Aeroplanes. By Col. F. G. Stone. P.R.A.I., February.

The Use of Aeroplanes in War. Translated from the *Russki Invalid.* By Major A. E. Harrison. P.R.A.I., February.

Dirigible Balloons. Translated from *Journal des Sciences Militaires.* By Lieut. C. O. C. Hunt. P.R.A.I., February.

The Motor Airship as an Instrument of War. Translated from *Jahrbücher für die Deutsche Armee und Marine.* By Capt. A. A. Koebel. P.R.A.I., February.

Aeronautical Motors and their Decrease in Weight. M.A.G., February.

Aerial Navigation in Modern Armies at the Beginning of 1909. I.R., p. 35. 1909.

ARTILLERY.

The Employment of the Russian Artillery in East Asia. By Lieut.-Gen. H. Rohne. A.M.B., December.

On the Reliability of Angular Formulæ for the Purpose of Calculating the Strength of Metal in Gun Tubes and Rifle Barrels. By Lieut.-Col. Heydenreich. A.M.B., December.

On the Reorganisation of the French Field Artillery. By Lieut.-Gen. H. Rohne. A.M.B., December.

Deports' Proposals as regards Gun Recoil Field Guns. By Maj.-Gen. Bahn. A.M.B., December.

Guns and Ammunition. (With a map.) By Lieut.-Col. Boissonnet. R.M.G., December.

The Artillery Combat according to the French and German Manœuvre Regulations. By Major Tournaire. R.d'A., October.

On the Construction of Guns for Use against Balloons. R.M.S., December.

Report on a Six Weeks' Instructional Tour in 1907. III. The Skoda Works in Pilsen. By Major A. Reutter. M.A.G., December.

The Question of "Deflection and Travel Correction" with Anti-torpedo Boat Guns. By Lieut.-Col. C. P. Martel. P.R.A.I., January.

Mechanical Time Fuses. By Major Goebel Düsseldorf. A.M.B., January.

The Mountings of More Modern High-angle Guns. K.T.Z., Heft 1.

A New Projectile. K.T.Z., Heft 1.

Artillery Patrols. By an Artillery Officer. O.M.Z., January.

Howitzers in Coast Defence. By Capt. Schweeger. M.A.G., January.

Arms for Coast Defence, and the Independent Line of Sight. By Capt. Brandl. M.A.G., January.

High-angle Fire for Protection against Airships. E., 26th February.

The Scientific Basis of the New Lewis Depression Range-Finder. By Albert W. Erdman. U.S.A., January, February.

The Evacuation of Detraining Stations for Siege Parks. M.A.G., January.

Breech Blocks. E., 12th February.

Measurement of the Velocity of a Projectile, and the Resistance to the Air, by means of a Table of Range and Elevation. By Sir G. Greenhill. P.R.A.I., February.

Guns for Fighting Dirigible Balloons. Translated from A.M.B. By Capt. E. H. E. Collen. P.R.A.I., February.

Theory and Calculations as to Pneumatic Recoil Apparatus for Guns. M.A.G., February.

Influence of the Final Velocity on the Effect of the Capped Armour-Piercing Projectile. M.A.G., February.

Hydraulic Recoil in relation to High-angle Fire Guns; Automatic Breech-closing Apparatus. M.A.G., February.

Impressions from an Artillery Intelligence Course. O.M.Z., February.

The New Foot Artillery Regulations. I.R., p. 41. 1909.

Employment of the "Scissors Telescope" in the Artillery. K.T.Z., p. 79, 1909.

On Field Artillery Training. M.W.B. (I.), No. 28, 1909.

Experiences in the Employment of Field Artillery from a Fire Tactics point of view in Recent Wars outside Europe. By Major Seeger. J.D.A.M. (I.), 1909.

The Development of the French and German Q.F. Field Guns, and a comparison of their powers. By Major-General Bahn. M.W.B., Nos. 16 and 17, 1909.

The Artillery Question in France. M.W.B., No. 12, 1909.

French Views on the Employment of Artillery. By General von Rohne. M.W.B., No. 15, 1909.

Sea Coast Artillery Practice. By Major John W. Ruckman. U.S.A., January, February.

CAVALRY.

The *Rôle* of Cavalry in Future Wars. Conclusions drawn from the recent Army Manœuvres in the centre of France. (September, 1908). By a Cavalry Colonel. (Concluded.) J.S.M., 1st, 15th December.

The War Training of Cavalry. By Major-General Buxbaum. K.M., December.

The Cause and Effect of Shock Tactics. By Lieut.-Colonel Wenninger. (Conclusion.) K.M., December.

The Cavalry in the French Manœuvres of 1908. By Colonel Aubier. R.C., November.

Seydlitz. Editorial. (Continued.) R.C., November.

Cavalry Reconnaissance in all its various forms. Editorial. (Continued.) R.C., November.

The Herbert Cavalry Bridging Equipment. By Lieut.-Colonel Herbert. M.A.G., December.

The Feeding of the Troop Horse in India. By Colonel H. de B. de Lisle. C.J., January.

Cavalry in the Battle of Sandepu. K.M., January.

Notes on the Employment of Cavalry in the Rocky Country of the Balkans. K.M., January.

Our Summer Work. K.M., January.

The Equipment of Cavalry with better Firearms. K.M., January.

Considerations as to the Augmented Value of Cavalry through the Introduction of a better Firearm and of Machine Gun Sections. K.M., February.

Employment of Divisional Cavalry. K.M., February.

The Training of Cavalry for War. K.M., February.

Remount Breeding in Germany: The Mexican Cavalry. K.M., February.

DEFENCE: HOME AND IMPERIAL.

Is Invasion Possible? By Major-General F. S. Russell. N.C., January.

A National Army, from an Employer's Point of View. By Sir Benjamin Browne. N.D., January.

The Value of the Territorial Force. Q.R., January.

Defence of Harbours by Fortification. Brigadier-General R. F. Johnson. (Continued.) J.U.S.I., January, February.

Invasion Considered from the Naval Standpoint. By Master Mariner. C.R., February.

The Invasion of England from the English Point of View. Translated from German by Captain R. H. Anstruther. U.S.M., February.

A Labour Member's View of National Defence. By Will Thorne. N.D., March.

Training for Home Defence. By Colonel Alsager Pollock. N.D., March.

FORTIFICATION AND MILITARY TRAINING.

Experiments to determine the Strength of the Austro-Hungarian Bridging Equipment. (Continued.) By Lieutenant Valerian Maryanski. M.A.G., December, January.

Utilisation of the Experience gained by the Defence of Port Arthur for the Construction of Fortresses. By Lieutenant Frobenius. J.D.A.M., January.

A Combined Weapon and Entrenching Tool. By Captain F. R. Lee. P.U.S.I., January.

A Hasty Entrenching Tool. By Thakur. P.U.S.I., January.

The Preparation of Fortresses for Defence by Means of Subterranean Mines, in the Light of the Experiences of Port Arthur. By V. Yakovlev. Inj., November, December.

HISTORICAL.

A Military Retrospect (1907-1815), and a Surmise. By Lieutenant A. C. Taylor. A.M.S., No. 96.

A Summary of the Campaigns which led up to the Wilderness Campaign in 1864. By Captain J. W. O'Dowda. A.M.S., No. 97.

The Early Days of the John Company. By Malcolm Seton. N.D., January.

F. Hoenig and the Battle of Gravelotte. By Otto Herrmann. J.D.A.M., December.

Blücher's Crossing of the Rhine by Kaub on 1st January, 1814. M.W.M., 31st December.

Yorck as an Instructor of the Prussian Army. M.W.B., Supp., 1908, p. 453.

Sweden's Share in the Seven Years' War. M.W.B., Supp., 1908, p. 453.

The Charge of Somosierra on the 30th November, 1808. By Captain Hugo Kernchnawe. K.M., December.

The Observation Corps of the Alps in 1815. By Captain Hennequin. (Continued.) L.S.M., 1st and 15th December.

The Siege of Besançon by the Austrians in 1814. By Lieutenant Borrey. (To be continued.) L.S.M., 15th December.

An Incident in the Battle of Gravelotte. By General Lamiraux. L.S.M., 1st December.

The Capitulation of Baylen. By Paul Metzger. (Conclusion.) L.S.M., 1st December.

Reminiscences of a Captain of Cavalry (1851-1881). (With 2 portraits.) By Henri Choppin. (Continued.) R.C., November.

Montcalm at the Battle of Carillon (8th July, 1758). French General Staff. (To be continued.) R.H., December.

The Armies of the Rhine under the French Directorate. French General Staff. (Continued.) R.H., December.

The War of 1870-71. The Investment of Paris. French General Staff. (Continued.) R.H., December.

The Battle of Busaco (27th December, 1810). French General Staff. (To be continued.) R.H., December.

The "Dos de Mayo" of 1808 in Madrid. By Major-General J. C. Dalton. P.R.A.I., January.

Fathers of the Indian Cavalry—Lieut.-General Sir John Hearsay. By Colonel H. W. Pearse. C.J., January.

A Short Account of the Cavalry Work during the Operations of the Mohmand Field Force, 1908. By Colonel C. B. Unwin. C.J., January.

Russo-Japanese War. By Colonel W. H. Birkbeck. C.J., January.

General Sir John Moore. By Lieut.-General H. D. Hutchinson. J.U.S.I., January.

A Forgotten Hero. By Colonel G. J. Harcourt. J.U.S.I., January.

The Military Efforts of Prussia under Frederick the Great and those of the German Empire. By Captain Polmann. J.D.A.M., January.

The Treaty of Portsmouth. By General Kuropatkin. M.C., January.

The Diary of Colonel G. Massy. By Captain C C. R. Murphy. P.U.S.I., January.

The Battlefields of North Italy. By Lieut.-Colonel Hon. E. Noel. P.U.S.I., January.

The Siege of Port Arthur. By Major H. F. Thuillier. P.U.S.I., January.

The American Land Forces in the War of Secession, and in the War against Spain. By Captain Deutelmoser. V.T.H., Heft 1.

The Anglo-Indian Army from the Days of its Formation to the Present Time. By Captain Heuschler. V.T.H., Heft I.

The Fights of the English in Afghanistan and on the North-West Frontier of India. By Lieutenant Strzemieczny. V.T.H., Heft 1.

An Outline of the Franco-German War. By Captain F. W. Maycock. U.S.M., February.

The Battles of the Nivelle and the Nive. By Major G. W. Redway. U.S.M., February.

The Establishment of British Dominion in Uganda. By Henri Rolin. B.C.C., Nos. 10, 11, and 12, 1908.

Chang-chuang-tzu. (An account of the fighting on the 1st March, 1905, and the means adopted to fortify the position, with sketch maps and diagrams.) By Colonel Rosenschild-Paulin, 7th Rifle Regiment. V.S., January.

The 5th E.S. Rifle Regiment at Chin-chou and Port Arthur (with maps and sketches). By N. Tretyakov. V.S., January.

Reminiscences of the Siege of Port Arthur. By Lieutenant N. Podgurski. (Continued.) V.S., January.

The Work of the 4th Don Cossack Division in the Raid on Ying-kou. By N. Philimonov. V.S., December.

The Origin of the Crimean War. By Dr. Emil Daniels. P.J., Vol. 135, 1909.

Napoleon's Strategy in 1805 (Ulm) and 1809 (Ratisbon). M.W.B., 9th February.

The Social Characteristics of the Influence of Napoleon. By J. Diez. L.S.M., 1st, 15th January.

MEDICAL AND SANITARY.

Have Trypanosomes an Ultra-Microscopical Stage in their Life-History? By Col. Sir D. Bruce and Capt. H. Bateman. J.R.A.M., January.

Tuberculosis in the British Army, and its Prevention. By Lieut.-Col. R. J. Simpson. J.R.A.M., January.

Enteric Fever among the Troops in Bermuda. By Major C. F. Wanhill. J.R.A.M., January.

Lactic Acid Bacilli. By F. G. Bushnell and Major G. Dansey Browning. J.R.A.M., January.

The Extraction of Teeth. By Capt. S. C. Bowle. J.R.A.M., January.

A Method of Preventing Soil Contamination in Field Urinals. By Capt. R. Mackenzie Skinner. J.R.A.M., January.

The Removal of Sick and Wounded from the Battlefield. By Lieut.-Col. W. G. Macpherson. J.R.A.M., January.

The Hygiene of the Rank and File. By Oberleutnant O. Pransa. O.M.Z., December.

Antityphoid Inoculations and their Employment in the Army. By Med. Principal M. Vincent. A.M.P., December.

Treatment under Military Conditions of Inguinal Hernia. By Oberstabsarzt Doebbelin. D.M.Z., 20th November.

Treatment of Heart Disease amongst Soldiers by Carbonic Acid Baths. By Stabsarzt Hufnagel. D.M.Z., 20th November.

Origin and Condition of American Immigrants. By Med. Director M. Simons, U.S.N. J.A.M.S., December.

Medical Organization of the United States Army for Service with a Division. By Lieut. G. H. Richardson, U.S.A. (Medical Reserve Corps). J.A.M.S., December.

Co-operative Work of the Medical Services of the United States Government. By Dr. H. W. Austin. J.A.M.S., December.

The Transport of Wounded at Night in a Naked Rock-Soil Country. By Staff-Col. Dr. Taussig and Regimental Doctor Andauer. O.M.Z., January.

Preliminary Note on Experiments in connection with the Transmission of Tick Fever. By Brevet Lieut.-Col. W. B. Leishman. J.R.A.M., February.

Preliminary Note on the Use of Antityphoid Vaccine in the Treatment of Enteric Fever. By Capt. A. B. Smallman. J.R.A.M., February.

The Isolation of *Bacillus Typhosus* from Excreta. By Capt. H. B. Fawcus. J.R.A.M., February.

Protracted Infection in Enteric Fever, with Notes on a series of cases apparently caused by a "Carrier." By Major E. W. W. Cochrane. J.R.A.M., February.

Statistical Table of the Recent Results of Antityphoid Inoculation. By Brevet Lieut.-Col. W. B. Leishman. J.R.A.M., February.

Suggestions for the Physical Training of Officers. By Lieut.-Col. C. Richards, Med. Corps, U.S.A. J.M.S.I., January, February.

The Medical Department of the United States Army: Upon what lines should its much-needed reorganization be instituted? By Major C. F. Mason, Med. Corps. J.M.S.I., January, February.

The Sanitary Responsibility of the Line Officer. By Capt. F. T. Woodbury, Med. Corps, U.S.A. U.S.I., January.

Arrows and Arrow Poisons in Northern Nigeria. By Allan C. Parsons. B.M.J., 23rd January.

Preliminary Annual Report of the Health of the German Army for the years 1st October, 1906, to 30th September, 1907, and 1st October, 1907, to 30th September, 1908. D.M.Z., 20th January.

A Journey through Holland for the purpose of Studying its Army Medical Organization. By Oberstabsarzt Neuburger. D.M.Z., 20th January.

Recent Research Work on the Use and Abuse of Alcohol. By Fleet-Surgeon O. W. Andrews. J.R.A.M., February.

Notes on the Treatment of Cholera. By Capt. J. A. Balck and Lieut. A. Harper Napier. J.R.A.M., February.

The Collection and Treatment of Wounded Cavalry Soldiers. By Lieut.-Col. W. G. Macpherson. J.R.A.M., February.

Second Report of the Committee on the Physiological Effects of Food, Training, and Clothing on the Soldier. J.R.A.M., February.

MISCELLANEOUS.

The Soldier in Southern Nigeria. By Lieut. R. H. Rowe. U.S.M., January.

The Dynamic Quality of a Territorial Force. By Lord Esher. N.D., January.

The Situation in the Balkan Peninsula. By Militarist. N.D., January.

The Second Line Army from Month to Month. By Territorialist. N.D., January.

A Railway to India. By C. E. D. Black. N.C., January.

Range-finder Tests in America. E., 18th December.

Tactics and the Health of the Army, 1848-1908. By Field-Marshal Sir Evelyn Wood. J.R.A.M., January.

The Sjögren Automatic Military Rifle. E., 25th December.

Notes on Foodstuffs. By Major G. Conway Gordon. (To be continued.) A.S.C., January.

Cooking Boxes for Supply Purposes in Mountain Warfare. M.W.B., 17th December.

A Proposal for the Use of Vapour as a Means of Protection. M.W.B., 29th December.

The Armed Strength of Turkey in Europe. By Lieut. Seidel. M.W.B., 31st December.

The German War Budget for 1908. Editorial. J.S.M., 15th December.

The Use of the Ski in Foreign Armies. French General Staff. (Conclusion.) R.M.E., December.

Notes on Water Supply. By Capt. C. W. Singer. C.J., January.

A Ride in the Balkans during the Crisis. By Lieut. Bertrand Stewart. C.J., January.

The von Löbell Annual Report on Military Matters for 1907. Translated by Lieut.-Col. E. Gunter. J.U.S.I., January, February.

Rejuvenated Turkey and its Army. By Gen. Freiherr v. der Goltz. V.T.H., Heft 1.

The Commander and his Staff. By Capt. v. Hingst. V.T.H., Heft 1.

The Russo-Japanese War—Criticisms and Observations. Extracts from Japanese Military Literature after the War. (Continued.) O.M.Z., January.

Military Impressions of an Englishman on the Battlefields about Metz. M.W.B., 21st January.

Business Principles in Military Finance. By Capt. Mark Synge. P.U.S.I., January.

War at the Present Day. Reproduced from the Deutsche Revue. N.R., February.

The Use of the Ski in Foreign Armies. J.U.S.I., February.

The Defence Question in Denmark. By Ogier le Danois. J.U.S.I., March.

Britain's Value as an Ally. By Miles. J.U.S.I., March.

Diplomacy, Strategy and Tactics in the Year 1000 B.C. By Lieut. H. J. Pechell. J.U.S.I., March.

The Army in the Great War. By Sir Charles Dilke. N.D., March.

Legal Liabilities in the Territorial Force. By Harold Baker. N.D., March.

Professional Notes. U.S.A., January, February.

The Short Base Range-finder and its Principles of Construction. By H. Dennis Taylor. E., 12th February.

Machine Guns. M.A.G., February.

The Servian and Montenegrin Armies. O.M.Z., February.

Automatic Railway Brakes. M.W.B. (I.), No. 20, 1909.

Military Review of the Year 1908. I.R., Supp. 104, 1909.

The Danish Army—Proposed Bill for Re-organizing the Land Defences. M.W.B. (I.), No. 28, 1909.

Remarks on the Military Expeditions of France in Morocco. M.W.B. (I.), No. 26, 1909.

The Centenary of the Prussian War Office. M.W.B. (I.), No. 28, 1909.

MOTORS AND MOTOR TRACTION.

Further Development of the Hornsby Chain Track Type of Vehicle. A.S.C., January.

The Armoured Machine Gun Motor Cart. By Major-Gen. v. Schempff. T.D.A.M.

Military Notes. J.U.S.I., January.

60-Brake-Horse-power Tractor for Military Service. E., 5th March

Military Tractor Trials. E., 5th March.

25-Horse-power Tractor for Military Service. E., 5th March.

The Thorneycroft Tractor. E., 5th March.

Motor Mounted Infantry. By Capt. R. S. Walker. J.U.S.I., March.

ORGANIZATION AND ADMINISTRATION.

The Foundations of Reform. N.D., January.

The Objects and Manning of the General Staff. By Col. C. E. Callwell, C.B. N.D., January.

The Organization of the French Infantry and Artillery. A Discussion on this subject by various Noted Officers of the French Army. J.S.M., 1st, 15th December.

The Lines of Communication of the Grand Army in 1806-7. French General Staff. (Continued.) R.H., December.

The Mussulmans and Compulsory Service in Bosnia-Herzegovina. J.U.S.I., January.

The New Organization of the Regular Army and the Territorial Forces at Home. By Major G. F. MacMunn. P.U.S.I., January.

The Law Regarding Military Service in Holland and Belgium. (Continued.) L.B.M., 31st January.

The Supply of the Army in the War of 1904-5. By V. Nedzvyedski. I.J., January.

Reserve Officers. By Captain Coquet. (To be continued.) J.S.M., 1st February.

STRATEGICAL AND TACTICAL.

General Carl von Clausewitz on War. Translated by Miss Maguire. With Notes by T. Miller Maguire. U.S.M., January, February, March.

The Decisive Attack. By Capt. E. Buat. (To be continued.) J.S.M., 1st, 15th, December.

The Tactics of the Russian and Japanese Armies in the Manchurian War. (With 4 maps.) (Continued.) By Lieut.-Col. Janin. L.R.I., 15th December, 15th January.

The Imperial Japanese Manœuvres of 1907. (With 1 map.) Translated from the German by Major Painvin. L.R.I., 15th December.

To what Extent have the Conditions of Success in War been Modified since 1871? By General von Blume. (French translation from German by Major Painvin.) (Continued.) L.R.I., 15th December.

The Realities of the Battlefield. (2 maps.) By Major Grange. (Continued.) L.R.I., 15th December, 15th January.

Attacks without previous Preparation. (With 1 map.) By General Daudignac. R.M.G., December.

August 16th, 1870 (the Battle of Rezonville). By Capt. F. Canonne. (Continued.) R.M.G., December.

The General Character of the War in the Far East: the Losses in Manchuria and those in Wars of the Past. By Capt. F. Culmann. (To be continued.) R.M.G., December.

The Decisive Attack. By "E. G." (To be continued.) L.S.M., 15th December, 1st January.

Strategic Advanced Guards; or, Manœuvres of Covering Troops. By Col. Dumas. (Continued.) L.S.M., 15th December.

The Campaign in Morocco, and the Lessons of the African War. By Col. Sainte-Chapelle. (Continued.) R.C., November.

The Russo-Japanese War. French General Staff. (Continued.) R.M.E., December.

Tactical Studies of the Campaigns of 1806—Auerstedt. French General Staff. (Continued.) R.H., December.

Artillery from an Infantry Point of View. By Brig.-Gen. R. Haking. P.R.A.I., January.

Tactical Observation and the Transmission of Reports. By Brig.-Gen. E. H. Allenby. C.J., January.

The Combination of Shock with Dismounted Fire Action. By "Bengal Lancer." C.J., January.

Modern Artillery Tactics. By Lieut.-Gen. H. Rohne. A.M.B. January.

Infantry and Cavalry Machine Guns. By Major Vuilleumier. (To be continued.) R.M.S., January.

Theory and Practice with King Frederick. Napoleon, and Moltke. By Col. F. v. Freytag-Loringhoven. V.T.H., Heft 1.

Minor Tactics. (The Setting of Tactical Schemes.) M.W.B., No. 5.

What should be the Demeanour of Security Troops on the March and on Outpost towards the Enemy's Armoured Motors? M.W.B., 14th January.

Safety at Night in Frontier Warfare. By Capt. G. R. P. Wheatley. P.U.S.I., January.

Searchlights in Field Operations. By Capt. R. Walker. R.E.J., February.

Supply of Ammunition. By R. and McE. J.U.S.I., March.

Tactical Lessons of the Russo-Japanese War. Translated from the "Spectateur Militaire." By Major E. P. Smith. P.R.A.I., February.

Infantry Formations in the Attack from an Artilleryman's Point of View. By Major C. E. Budworth. P.R.A.I., February.

Montenegrin Conduct of War and Tactics. O.M.Z., February.

The Defence and Attack of Fortified Positions in the Field. By Major Fritsch. B.P.B.M., 15th, 31st January.

The Rôle of Cavalry in Reconnaissance. By Capt. Janet. J.S.M., 15th January, 1st February.

Reconnaissance and Observation. M.W.B., 9th February.

Tactical Employment of Searchlights. M.W.B., 11th, 13th, 16th February.

Notes on Observation in Position Warfare. M.W.B. (I.), No. 23, 1909.

The Counterstroke in Great Battles. M.W.B. (I.), No. 23, 1909.

The Attack and Defence of Fortified Positions. By Lieut.-Gen. von Görz. M.W.B. (I.), Nos. 17, 18, 1909.

TELEGRAPHS AND COMMUNICATIONS.

Post-Graduate Lectures on Radio-Telegraphy and Radio-Telephony. By Professor J. A. Fleming. E., 18th December.

Technical Means of Communication in the Army. N.M.B., 23rd January.

TRAINING AND EDUCATION.

The Training of Troops. By A. B. (Conclusion.) J.S.M., 1st December.

Suggestions regarding the Training of an Infantry Regiment. By Lieut.-Col. de Fonclare. J.S.M., 15th December, 15th January, 1st February.

Bayonet Fighting. By Capt. A. Quirot. L.S.M., 15th December.

The New German Manœuvre Regulations. French General Staff. R.M.E., December.

The Training of Territorial Horse Artillery. By Capt. Hon. G. F. Stanley. C.J., January.

School of Instruction for Mounted Infantry at Longmoor. By Major A. J. McNeill. C.J., January.

A System of Teaching Sketching in a Cavalry Regiment. By Lieut. F. G. Arkwright. C.J., January.

The Art of Command. By Col. von Spohn. J.U.S.I., January.

Field Service Musketry Practice by practically Untrained Men. Communicated by the Army School. O.M.Z., January.

The Military Instructor of To-day. By Lieut. Marceau. B.P.B.M., 15th, 31st January.

Infantry of the Territorial Force. By Namdaeh. J.U.S.I., March.

Physical Education and Training in Relation to National Defence. N.D., March.

Contributions by the Army School of Musketry. O.M.Z., February.

Shooting and Hitting. K.T.Z., p. 50, 1909.

Training for War. By Lieut.-Gen. Graf von Haslingen. J.D.A.M. (I.), 1909.

TRANSPORT.

The Past and Present Vehicles of the Army Service Corps. By Capt. H. C. Cumberlege. (Continued.) A.S.C., January.

With the Supply and Transport Corps in the Bazar Valley. By Capt. N. G. Anderson. A.S.C., January.

The Working of the Railways in the South African War. By W. Hyde Kelly. E., 15th January.

PART II.

SECTION III.

BOOKS, PAMPHLETS, ETC., WHICH HAVE BEEN DISTRIBUTED TO REFERENCE LIBRARIES.

Reorganization of Transport in the Russian Army, 1906-07.

Memorandum on Army Training, 1908.

Extracts from Annual Report of School of Gunnery, Horse, Field, and Heavy Artillery, 1908.

German Field Service Regulations, 1908.

German Manœuvre Regulations, 1908.

Papers used at Foreign Languages Examination held in January, 1909.

Report on the Examination of Officers in Subjects (*d*) to (*j*) for Promotion held in November, 1908.

ABBREVIATIONS.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
A.F.	Bulletin du Comité de l'Afrique française	M.	2 frs.	Paris.
A.F.H.	Archiv für Schiffs- und Tropen-Hygiene	½ M.	*	Leipzig.
A.H.M.	Annales d'hygiène et de médecine coloniale	M.	3 frs.	Paris.
A.J.	Artilleriskii Jurnal	M.	*	St. Petersburg.
A.M.B.	Artilleristische Monatshefte	M.	m. 2.50	Berlin.
A.M.P.	Archives de médecine et de pharmacie militaires	M.	2 frs.	Paris.
A.M.S.	Proceedings of the Aldershot Military Society	...	/6	London.
A.N.R.	Army and Navy Register	W.	15 c.	Washington.
A.Q.R.	Imperial and Asiatic Quarterly Review	Q.	2/6	Woking.
A.S.C.	Army Service Corps Quarterly	Q.	2/-	Aldershot.
A.S.M.	Allgemeine schweizerische Militärzeitung	W.	*	Basle.
B.Mag.	Blackwood's Magazine	M.	2/6	Edinburgh.
B.M.J.	British Medical Journal	W.	/6	London.
B.P.B.M.	Bulletin de la Presse et de la Bibliographie militaires. (Supplement to J.M.O.B.)	F.	*	Brussels.
B.S.C.	Bulletin international des sociétés de la croix rouge	M.	50 c.	Geneva.
C.J.	Cavalry Journal	Q.	2/6	London.
C. Mag.	Canadian Magazine	M.	25 c.	Toronto.
C.M.G.	Canadian Military Gazette	F.	10 c.	Montreal.
C.O.J.	Colonial Office Journal	Q.	1/6	London.
Con.	Der Continent	M.	m. 1.25	Berlin.
C.R.	Contemporary Review	M.	2/6	London.
D.M.S.	De militaire Spectator	M.	1 fr. 50	Haarlem.
D.M.Z.	Deutsche militärärztliche Zeitschrift	½ M.	*	Berlin.
E.	Engineering	W.	/6	London.
Ec.	Economist	W.	/8	London.
Emp. R.	Empire Review	M.	1/-	London.
E.R.	Edinburgh Review	Q.	6/-	London.
F.M.F.	Feuille militaire Fédérale	V.	40 c.	Berne.
F. Rev.	Fortnightly Review	M.	2/6	London.
I.J.	Intendanski Jurnal	M.	*	St. Petersburg.
I.M.T.	Indisch Militair Tijdschrift	M.	1 fr. 50	Batavia.
Inj.	Injeniernii Jurnal	M.	*	St. Petersburg.
I.R.	Internationale Revue (Armeen und Flotten)	M.	m. 3.25	Dresden.
J.A.M.S.	The Military Surgeon. Journal of the Assoc. of Military Surgeons	M.	35 c.	Carlisle, Penn.
J.A.S.	Journal of the African Society	Q.	6/-	London.
J.D.A.M.	Jahrbücher für die Deutsche Armee und Marine	M.	m. 2.50	Berlin.
J.M.O.B.	Journal militaire Officiel	M.	*	Brussels.
J.M.S.I.	Journal of the Military Service Institution	2 M.	50 c.	Governor's Island, N. York
J.M.S.S.	Journal of the Military Scientific Society (Russian)	Q.	1 Ro. 50kop.	St. Petersburg.
J.R.A.M.	Journal of the Royal Army Medical Corps	M.	2/-	London.
J.R.C.I.	Journal of the Royal Colonial Institute	M.	/6	London.
J.S.M.	Journal des Sciences militaires	M.	*	Paris.
J.U.S.I.	Journal of the Royal United Service Institution	M.	2/-	London.

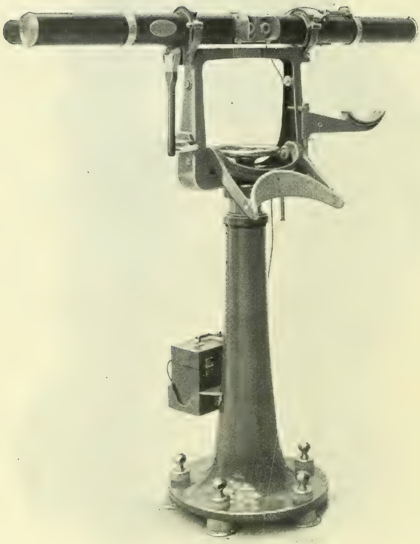
W., published weekly; F., fortnightly; M., monthly; Q., quarterly;
V., at irregular intervals; A., annually.
* Periodicals which can only be purchased by subscription.

ABBREVIATIONS.—contd.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
J.U.S.I. (N.S.W.)	Journal of the United Service Institution of New South Wales	A.	*	Sydney.
K.M. ...	Kavalleristische Monatshefte	M.	k. 2.	Vienna.
K.T.Z. ..	Kriegstechnische Zeitschrift	M.	m.1.50	Berlin.
L.... ...	Lancet	W.	-/7	London.
L.A.F. ..	Comité de l'Asie française, Bulletin ...	M.	2.25frs	Paris.
L.B.M. ...	La Belgique militaire	W.	25 c.	Brussels.
L.R.I. ...	La Revue d'Infanterie	M.	2 frs.	Paris.
L.S.M. ...	Le Spectateur militaire	F.	2 frs.	Paris.
M.A.G. ...	Mittn. über Gegenstände des Art.- u. Genie-Wesens	M.	*	Vienna.
M. Art. ...	Memorial de Artillería	M.	*	Madrid
M.C. ...	McClure's Magazine	M.	25 c.	New York.
M.I.E. ...	Memorial de ingenieros del ejército ...	M.	*	Madrid.
M.R. ...	Marine-Rundschau	M.	m. 2.	Berlin.
M.W.B. ...	Militär-Wöchenblatt	⅓W.	20 pf.	Berlin.
N.C. ...	Nineteenth Century	M.	2/6	London.
N.D. ...	National Defence	M.	1/-	London.
N.I.A. ...	Nation in Arms	M.	/3	London.
N.M.B. ...	Neue Militärische Blätter	W.	60 pf.	Berlin.
N.R. ...	National Review	M.	2/6	London.
O.M.Z. ...	Streffleurs militärische Zeitschrift, zugleich Organ der militär-wissenschaftlichen Vereine	M.	*	Vienna.
P.J. ...	Preussische Jahrbücher	M.	m.2.50	Berlin.
P.R.A.I. ...	Journal of the Royal Artillery	M.	2/6	Woolwich.
P.U.S.I. ...	Journal of the United Service Institution of India	Q.	2 Rs.	Simla.
Q.D. .	Questions diplomatiques et coloniales..	F.	75 c.	Paris.
Q.R. ...	Quarterly Review...	Q.	6/-	London
R.A.G. ...	Rivista di Artiglieria e Genio	M.	*	Rome.
R.C. ...	Revue de Cavalerie	M.	*	Paris.
R. d'A. ...	Revue d'Artillerie...	M.	*	Paris.
R.D.D.M.	Revue des Deux Mondes...	½M.	3 frs.	Paris.
R. du G....	Revue du Génie militaire	M.	2.50fr.	Paris.
R.E.J. ..	Royal Engineers' Journal	M.	1/6	Chatham.
R.I.C. ...	Revue Indo-Chinoise	F.	1.50frs	Hanoi.
R.I.M. ...	Revue du service de l'intendance militaire	M.	2 frs.	Paris.
R.H. ...	Revue d'Histoire	M.	2 frs.	Paris.
R.M.B. ...	Revue de l'Armée belge	2 M	*	Liège
R.M.E. ...	Revue militaire des Armées étrangères	M.	1 fr.	Paris.
R.M.G. ...	Revue militaire générale	M.	2.50fr.	Paris.
R.M.I. ...	Rivista militare italiana	M.	2 lire	Rome.
R.M.L. ...	Revista militar	F.	200 reis.	Lisbon.
R.M.S. ...	Revue militaire suisse	M.	*	Lucerne.
R.T.C. ...	Revue des Troupes Coloniales	M.	2 frs.	Paris.
S.G.R. ...	Saint George's Review	M.	1/-	London.
S.Z.A.G. ...	Schweizerische Zeitschrift für Artillerie und Genie	M.	*	Frauenfeld.
U.S.A. ...	United States Artillery Journal... ...	2 M.	50 c.	Fort Monroe
U.S.C. ...	United States Cavalry Association Journal	Q.	50 c.	Fort Leavenworth
U.S.I. ...	United States Infantry Association Journal	Q.	50 c.	Washington.
U.S.M. ...	United Service Magazine (Colburn's) ...	M.	2/-	London.
V.R.K. ..	Vyestnik Russkoi Konnitsi	F.	*	St. Petersburg.
V.S. ...	Voyennii Sbornik (Military Journal) ...	M.	*	St. Petersburg.
V.T.H. ...	Vierteljahrshefte für Truppenführung und Heereskunde	Q.	*	Berlin.

W., published weekly; F., fortnightly; M., monthly; Q., quarterly; V., at irregular intervals; A., annually. * Periodicals which can only be purchased by subscription.

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA



THE BARR AND STROUD RANGEFINDER. FA TYPE. 4 FT. 6 IN BASE.
ON MOUNTING NM TYPE.

FOR USE ON BOARD BATTLE-SHIPS AND CRUISERS.

The Rangefinder is mounted on roller bearings, and controlled in altitude by the observer's left hand, while it is controlled in azimuth by the breast piece.

The mounting can be raised or lowered to suit the height of the observer, and is constructed of gun-metal.

Approximate uncertainty of observation at a range of:—

1000	yards, is	2	yards.
3000	,,	18	,,
5000	,,	50	,,
10000	,,	200	,,

Barr and Stroud,
Anniesland,
Glasgow.

Photographed from the Painting by ERNEST CROFTS, R.A.

THE EXECUTION, IN FRONT OF WHITEHALL, OF KING CHARLES I., JANUARY 30TH, 1649.

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. AUGUST, 1909. No. 378.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

The following officers joined the Institution during the month of July:—

Captain W. T. C. Davidson, Dorset Regiment.
Captain A. R. M. Roe, Dorset Regiment.
Major A. M. Connell, R.A.M.C. (T.)
Sub-Lieutenant R. N. Stopford, R.N.
Lieutenant R. D. Gard'ner, Seaforth Highlanders.
Lieutenant H. C. S. Rawson, R.N. (retired).
Major B. I. Way, 4th Bn. North Staffordshire Regiment.
Engineer W. T. Brown, R.N.R.
Captain C. G. E. Stevens-Nash, R.G.A.
Captain G. H. B. Freeth D.S.O., Lancashire Fusiliers.
Lieut.-Colonel H. A. Woolf, Transvaal Cycle Corps.
Lieutenant H. E. Kentish, R.E.
Second-Lieutenant J. H. M. Cornwall, R.F.A.
Captain E. B. Hankey, Worcestershire Regiment.
Captain F. T. Murray, Highland Light Infantry.
Lieutenant H. J. Nolan-Ferrall, Connaught Rangers.
Lieutenant G. N. Walford, R.F.A.
Lieutenant J. A. Dane, R.F.A.
Captain W. H. Alleyne, Royal West Surrey Regiment.
Colonel L. H. Hanbury, 4th Bn. Royal Berkshire Regiment.
Captain F. J. Marshall, Seaforth Highlanders.
Sub-Lieutenant A. U. Willis, R.N.
Captain N. J. Hopkins, R.E.
Captain H.S.H. Prince Alexander of Teck, G.C.V.O., D.S.O., Royal Horse Guards.
Lieutenant E. V. Anderson, Royal Highlanders.
Lieutenant E. C. B. Merriman, 6th Dragoons.
Lieutenant H. J. M. Rundle, R.N.
Sub-Lieutenant R. H. L. Alder, R.N.R.
Captain A. S. M. Porter, 3rd Bn. Q.R. West Surrey Regiment.
Lieutenant C. W. Von Roemer, R.F.R.A.

Captain J. T. C. Broadbent, Indian Army.
Captain G. H. N. Jackson, D.S.O., Border Regiment
Major H. O. Parr, Indian Army.
Lieutenant L. E. Barnes, R.E.
Lieutenant O. Y. Hibbert, Royal West Kent Regiment.
Lieutenant G. H. King, R.F.A.
Lieutenant H. C. Stephen, Northumberland Fusiliers.
Lieutenant T. C. King, 14th King's Hussars.
Lieutenant D. H. Powell, Indian Army.
Lieut.-Colonel H. S. Langhorne, Army Ordnance Department.

II. ADDITIONS TO THE MUSEUM.

6011. Officer's Helmet-Plate and Belt Buckle of the 16th Bedfordshire Regiment, worn subsequent to 1881.
—Given by Major-General C. J. Horne.

6013. General Christian De Wet's Heliograph.
—Given by Colonel H. De B. De Lisle, C.B., D.S.O., 1st Royal Dragoons.

6014. Painting in Oils, executed in 1859, of Captain William Slayter Smith, who was born in 1793. He was appointed Ensign in the 2nd Garrison Battalion on 25th December, 1806, and was promoted Lieutenant in November, 1808, after having been appointed Adjutant of the Regiment in June of that year. He served in the Peninsula War as Lieutenant in the 13th Light Dragoons during the years 1810-1812, and was once severely wounded, and twice slightly. He was present in the rank of Lieutenant in the 10th Hussars at the Battle of Waterloo, and in June, 1822, was appointed Adjutant of the Yorkshire Hussars, which office he held until the year 1864. On the occasion of his death on the 18th July, 1865, the Earl of Harewood, commanding the Yorkshire Hussars at the time, issued the following Regimental Order on 20th July of that year: "The Commanding Officer has to announce to the Regiment, with very great regret, the death of their late Adjutant, Captain Slayter Smith, at Ripon, on the 18th instant. He feels that all will join him in the desire to pay respect and honour to the remains of one who has served so long and honourably in the Corps, and to whose ability and exertions they are in a great measure indebted for the high character borne by the Regiment at the present time. He has, therefore, decided that the funeral of the deceased Officer shall be conducted with Military Honours at Ripon on Tuesday, the 25th instant, at 3 p.m., and all Officers and Men, who conveniently can, are invited to attend."

6015. Helmet of the 15th Light Dragoons of the pattern worn about 1765. The regiment greatly distinguished itself at Emsdorf in 1760, under Prince Ferdinand of Brunswick.
—Given by Major-General P. H. Sandilands.

6016. Officer's Helmet-Plate and Belt-Buckle of the Royal Wiltshire Militia.*—Given by Lucius Fitzgerald, Esq., late Lieutenant Royal Wilts Militia.*

6017. Dutch Naval Officer's Sword of the end of the 18th century. Brass hilt with ivory grip.—*Purchased.*

FOURTH ESSAY.

Honourably Mentioned.

Subject :—

"THE COMMAND OF THE SEA: WHAT IS IT?"

By Captain R. F. PHILLIMORE, M.V.O., R.N.

Motto :—

"*Regions Cæsar Never Knew Thy Posterity Shall Sway.*"

LIST OF WORKS REFERRED TO :—

James' "Naval History."

"Naval Warfare."—*Colomb.*

"The Influence of Sea Power upon History."—*Mahan.*

"The Influence of Sea Power upon the French Revolution and Empire."—*Mahan.*

"The Royal Navy. A History."—*Sir W. Laird Clowes.*

"England in the Seven Years' War."—*Julian C. Corbett.*

Rollin's "Universal History."

"La Guerre sur Mer."—*Gabriel Darieus.*

"Naval Policy."—*By Barfleur.*

"The Art of Naval Warfare."—*Sir Cyprian Bridge.*

"The Share of the Fleet in the Defence of the Empire"; "XIX. Century and After."—*Sir Cyprian Bridge.*

"The Naval Annual. 1908."

"Defence of Harbours by Fortification."—*Brigadier-General R. F. Johnson in the* JOURNAL *for September*, 1908.

"History of the British Army."—*Hon. John Fortescue.*

"General Gordon: A Personal Reminiscence."—*Viscount Esher.* "XIX. Century and After."

"The Conduct of War."—*Lieut.-General Von der Goltz.*

"Guerres Maritimes sous Le Republique et l'Empire."—*Jurien de la Graviere.*

NO wider scope could possibly have been chosen for an essay than that put forward this year by the Council of the Royal United Service Institution; the correct answer to the question bears an importance to the British Empire that it is impossible to exaggerate, since our very existence depends upon it.

In spite of the wide scope of the subject, it is not easy to break new ground, but an attempt can be made to deduce, from the general rules laid down by various authorities, the particular ones required to answer the question from the only standpoint with which we are concerned, that of the United Kingdom and His Majesty's Dominions beyond the Seas.

Of late years many master minds have discussed this and kindred sea matters, and every year sees an increase in the number of those following in the footsteps of Colomb in England and of Mahan in America; to the latter, indeed, must be awarded the proud distinction of having brought more grist to the shipbuilders' mill than any one man since history was written; it would be almost impossible to calculate the millions offered on the altar of ship construction in the name of the elusive goddess of sea power, since Mahan wrote his epoch-making books.

To searchers after truth in the year of grace 1908, there are many sources of information open which were not possessed by Colomb or by Mahan when his earlier works were written, many public archives and private memoirs have since seen the light of day, and we are now allowed peeps behind the scenes, where they saw only the stage effect, and were forced to guess at the nature of the machinery that set it in motion; but the general result of newer publications is only to throw into broader relief the clear-cut lines of the master's design, to emphasize his rules, and to point the moral of his conclusions.

We all know that Command of the Sea permitted us to transport our troops safely to South Africa in the last war, enabled the North to beat the South in America, gave us Canada and (by its absence) lost us our American Colonies and Minorca; that it also allowed us to carry out the historic blockades of Brest and Toulon, and the scarcely less important ones of Rochefort, Ferrol and Cadiz. That it can only be obtained by defeating or blockading the enemy's fleet is also a commonplace of naval history.

But to find an answer to what constitutes the Command of the Sea, and how it is to be retained, we must wander far beyond questions of naval strategy and naval tactics; the domain of the diplomatist must also be invaded, and the cabinet of Ministers of State cannot be excluded from the survey.

Over and over again in our history the solid results achieved by our seamen and our soldiers have been reduced, or entirely lost, when the sword gave place to the pen, and the defeats of the enemy by sea and land have been more than avenged when the opponents met again in the Conference; think of Java, given up by Castlereagh, who neither knew nor cared where the richest island in the world was situated; of the Convention of Cintra; of the Peace of Amiens.

Some day, *pour encourager les autres*, a Plenipotentiary may share the fate of Byng; but even then the balance against the fighting services will not have been redressed.

All of which shows the necessity of a policy framed to preserve the great inheritance handed down to us, by realising the presence of communities of our kith and kin exterior to this little pair of islands, and by taking into account, and jealously preserving, the priceless asset of sea power.

It is true that Englishmen have long been aware of what our forebears termed the "Sovereignty of the Sea." In 1336 King Edward III. issued a proclamation:—"We, considering that our progenitors, Kings of England, were Lords of the English Sea on every side. . . . . ."

Again: "Whosoever Commands the Sea, commands the trade; whosoever commands the trade of the world, commands the riches of the world, and, consequently, the world itself," so wrote Raleigh over 300 years ago.

Before that time we have Bacon, saying: "He that Commands the Sea is at great liberty, and may take as much and as little of the war as he will; whereas those that be strongest by land are many times, nevertheless, in great straits."

Even Charles II. laid down the doctrine: "It is the custom of the English to Command the Sea."

We have talked and written of Command of the Sea for nearly 600 years, and yet the question can still be put: "What is it?"

In a paper by Brigadier-General R. F. Johnson, in the September number of the JOURNAL, the answer is given (quoted from some correspondence in the *Times*) as follows:—"The command in certain waters exists when within those waters no hostile fleet can count on the time requisite for a serious enterprise without a strong probability of having a superior force to deal with."

Mahan writes of "Military control of the intervening sea" affording "reasonably secure communication" between ports.

Von der Goltz explains it as follows:—

> "The opposing forces being approximately equal, victory will in the end rest with the one that remains master of the sea. It will exhaust the financial power of the other by the destruction of its commerce and the stoppage of maritime traffic, and thus also undermine its military power."[1]

Definitions of the expression "Command of the Sea" are as many and varied as the moods of the element in question, but that given by Admiral Sir Cyprian Bridge in "The Art of Naval Warfare" has the merit of conciseness, clearness, and consistency; so let us adopt his "Control of Maritime Communications."

Having adopted a definition we are not very far on the road; for it is only when we begin to consider what are maritime communications of the Empire, and we are confronted with the image of that little spider of the British Isles in the midst of the gigantic web of his own spinning, that we begin to realise the difficulty of the problem.

---

[1] Von der Goltz, "The Conduct of War," p. 278.

The phrase "Command of the Sea" has always been applied in the sense of local control, though circumstances may have set very wide bounds to the areas of the localities.

For instance, the oft quoted War of 1778 had its three main areas in Europe, America and India, and the command of the sea in one or two of them was quite compatible with inferiority in the third; in fact, further sub-division of the areas often revealed different conditions existing in the Channel to the Mediterranean, and French control of the West Indies co-existent with British dominion over the American Continental waters.

In spite of all local conditions and dissimilar positions, some connection always exists in war between widely separated seas, and the judgment of Mahan attributes the loss of Minorca to the large naval force which Britain was compelled to maintain in the Western hemisphere; similarly, the loss of the American Colonies was due to the necessity for our keeping the squadrons in European waters up to strength, when, as Admiral Sir Cyprian Bridge epigrammatically says, "We saved a rock and lost a Continent."

What are our essential requirements for securing and keeping the Command of the Sea?

1. A good policy.
2. Preparation for war.
3. Wealth.

As the first and second of the above are governed by statecraft, and the third is largely due to individual effort, it is not surprising (given British idiosyncrasies and political limitations) that the last has alone been satisfactorily fulfilled by this country during the last 100 years; nevertheless, even though we have to work through the medium of clumsy departmental machinery, ever in danger of being brought to a standstill by the misapplied brake of party politics, it is most incumbent on us to see that the two former conditions are also complied with.

The first is partially dependent on other nations; as it takes two to make a quarrel, so it takes two to form a friendship, but realising that worthless friendships are neither valued nor sought after, we are led, almost insensibly, to the second requirement, preparation for war, the fulfilment of which rests entirely with ourselves; or, to put the matter in a stronger light, failure to comply with it is no one's fault but our own.

Preparation for war is again dependent, as to its scope and details, on the third condition: wealth.

The more these three conditions are examined, the more it will be found that they hang together, and that any two would fail in warfare without the third.

History teaches us that in the end it was Great Britain's money bags that weighed down the scale against Napoleon, for Pitt's Continental subsidies were as much deciding factors as Trafalgar or the Peninsular campaign.

Again, though the first and second conditions were fulfilled in the case of Japan in the last war against Russia, the lack of the third led to the signature of the Treaty of Portsmouth, when apparently the Japanese had beaten their enemy to his knees.

Happily, at present, we need not consider the wealth of the United Kingdom nor the increasing resources of the Greater Britain beyond the seas; but the various sub-divisions of policy afford wide scope for analysis, and in addition to preparation for war, the question of oversea invasion must be referred to, on account of the intimate connection existing between it and the Command of the Sea.

POLICY.

Policy in general can be sub-divided as below:—

a. Public;
b. Naval;
c. Colonial; and
d. Foreign Policy.

PUBLIC POLICY.

Though the second is the core of the whole matter, it depends very greatly on the first, for this reason:—

Naval policy, to be really effective, must be permanent, but to ensure permanency it must be based on scientific principles and be universally accepted, and in these democratic days, if a policy is to be supported by the bulk of intelligent public opinion, the necessity for it must be clearly understood; in other words, the naval schoolmaster must be abroad, for strange as it may sound, "the man in the street" has more power in keeping the Command of the Sea for us than "the man behind the gun."

Navy Leagues may hold drawing room meetings and try to stimulate interest among school boys by offering prizes for naval subjects, and their efforts are worthy of all praise, but what is required is a sustained educational effort, and this can only be carried out by the Education Department itself.

It is the bounden duty of the Government of this country to see that the necessity for a strong Navy is inculcated in all the elementary schools in the United Kingdom.

The doctrine of British sea power should be as universally accepted and acquiesced in as the various laws that regulate public health and decency, and there should be no great difficulty in substituting a concrete form for the vague floating outline of British Command of the Sea, which the public supposes to be always existent and to be part and parcel of the scheme of the universe.

The question of cost must not be shunned, but dealt with boldly as a safeguard against war, and the analogy with insurance against the dangers in civil life, fire, accident, and death, clearly explained.

British commerce afloat annually is worth about	£1,600,000,000
Value of British shipping	100,000,000
	£1,700,000,000

Thus Naval Estimates of £32,000,000 are less than 2 per cent. of the value of the shipping and commerce protected.

This cannot be too widely realised.

There is no reason why public departments should work isolated in water-tight compartments from each other, and it would be clearly for the benefit of the country in general and the Navy in particular if the First Lord of the Admiralty called his colleague, the President of the Board of Education, to his assistance.

The school boy would find familiarity with the ocean tracks of British steamships at least as interesting as geological formations, and the Navy Estimates would be discussed more intelligently in the House of Commons if Members were aware that their constituents understood the enormous value of our sea-borne trade and realised that the greater part of their daily food is brought to them from overseas.

The lesson that lack of preparation for war, far from being an economy, cost the French people their ransom of "Five Milliards," is an essential one for the adult taxpayer to learn and remember.

But we must begin with the boys, teaching the romance as well as the dry facts of the ocean and, properly imparted, the history of sea power will be learnt with avidity; only let it be taught that Bideford is as famous for its naval heroes as Kidderminster for its carpets, and that the defeat of the Great Armada and the battle of Trafalgar were at least as important facts in our history as the First Reform Bill.

The human boy is the same in all classes of life, and they all will wish that they could have sailed with Drake and died with Grenville.

Finally, if it is necessary that the school boy should still be stuffed with statistics, at least let them be of a nature to make him realise our dependence on Command of the Sea; that we spend £179,000,000 in imported food; that four-fifths of our wheat is grown abroad, and similar all-important facts.[1]

Every nation but our own teaches patriotism in its schools; let us take a leaf out of their book and a rich return will be garnered for every penny spent in the naval education of the masses.

What is the alternative? Following an interruption of their commerce (which was their sole resource), arising from the loss of a naval engagement, "they imagined themselves to be on the brink of ruin, and abandoned themselves to despondency and despair."[1]

---

[1] Board of Agriculture Report for 1907.

Would this not apply to modern England?

Yet it is a description of the Carthagenians at the time of the First Punic War.

Human nature has not altered much in the last 2,000 years; we know the fate of Carthage at the hands of the military Empire of Rome, and how laboriously the victors built and trained a Navy to accomplish that result.

Absit Omen.

NAVAL POLICY.

In the old toast, "Ships, Colonies and Commerce," we have the epitome of our naval policy—a sermon in a sentence—emphasizing the connection of the three great sources of the prosperity of Great Britain.

The future of the Empire is bound up in that of the King's Dominions beyond the Seas, and we must ever bear in mind the dictum of our arch-enemy Napoleon, on the occasion of the cession of Louisiana: "No Colonies without a Navy."

Colomb, writing of the affair at St. John de Ulloa, in 1567, says: "All the world seems to have thereafter become alive to two things: the enormous value of sea-borne commerce to the countries that carried it on, and the tremendous risks attending its prosecution in war, on the one hand, as well as the great advantages arising from its attack on the other."[2]

The elder Pitt was the greatest War Minister that this country ever had, and in the first despatch to an Ambassador abroad, written by his order, after he took office, the close relation between trade and naval strength is emphasized: "Trade and maritime force depend upon each other," and "the true resources of this country depend upon its commerce."[3]

In laying stress on the attack and defence of commerce, no fantastic theories of "Guerre de Course" are implied, the construction of no special "Chateau Renaults" are advocated for our Navy; but the definition adopted for "Command of the Sea" must be remembered.

"Control of Ocean Communications" is our text, and its correctness has to be proved.

In spite of the enormous losses suffered by our trade in the Great War, it is notorious that we finished richer than we began, our supremacy was unrivalled, and, thanks to the destruction of our enemies' shipping, we found ourselves the carriers of the world. (Between 1792 and 1800 alone the commerce of Great Britain increased by 65 per cent., the loss by capture being less than 2½ per cent. on the annual volume of trade.)

---

[1] Rollins' Universal History.

[2] "Naval Warfare," p. 7.

[3] "England in the Seven Years' War," Vol. I., p. 189.

Why this enormous increase? Because we controlled maritime communications through possessing the Command of the Sea. Incidentally to obtain that control we had defeated the fleets of the enemy, blockaded him in his own ports, and captured his outlying possessions.

There were times when locally the Command of the Sea was lost; even in Nelson's chase to the West Indies Villeneuve controlled maritime communication there for a brief 21 days, and captured the Diamond Rock and a convoy of 17 sail; but after Trafalgar it can truthfully be said that we controlled ocean communications.

Nevertheless, after Trafalgar, our shipping suffered heavy losses from the enemy's cruisers, and since those days it has enormously increased, and, with it, our risks.

It must be borne in mind that British shipping captured in the China Seas, or in the Pacific, is as much a blow to the trade of the Empire as if that capture took place in the English Channel. A blow may be received at an extremity of the human body which will affect the action of the heart.

The British Empire has interests in all the seas; it is therefore imperative that the White Ensign should be seen in all. Most of us will admit (some, perhaps, grudgingly) that this is desirable in peace, but the point is, that it is necessary for war.

It cannot be otherwise than a mistake to relinquish our world-wide policy (remember Bismarck's comment on the retrocession of the Ionian Islands), and the retreat is not covered by sneers at "police duties" and phrases about "ships being only built to fight."

Other Powers are only too anxious to occupy our vacated position; we have had a nasty experience of our American cousins performing "police duties" in Jamaica, and, as a German officer remarked to one of our's in China: "For every gunboat you withdraw from the Yang-Tse we will put one on the river."

Let us return without delay to our self-imposed task and resume the duties, so beautifully described in our naval prayer, of insuring the "security of such as pass on the seas upon their lawful occasions."

Distribution of force is not necessarily dispersion.

During the American Civil War, though the Federals had Command of the Sea in the actual theatre of operations, a few Confederate cruisers, far away from the Atlantic coast, committed havoc among the Northern Mercantile Marine; but how insignificant were the numbers they captured compared to the prizes awaiting the enemy in a war against Great Britain, when we consider that in our last war with America we lost a thousand merchant ships in eighteen months. Our South Atlantic and Pacific Squadrons have lately been abolished in order to concentrate more ships in the North Sea; but look at the trade that streams past Pernambuco and Sierra Leone, and the thousands of tons of British shipping in South American waters. It is obvious that in war, if British cruisers are not off the River Plate the enemy's will be, but if the South Atlantic Squadron is in home waters when war breaks out, uninstructed public opinion will clamour for their retention, and they will never go south.

British interests in the Pacific also require protection now; the opening of the Panama Canal will bring unknown elements of danger into play, when demands for the replacement of the squadron will be more insistent than ever.

Armoured cruisers are not required for either of these squadrons, as it is practically certain that no enemy would be able to spare his own for attack on commerce, but they should contain sea-keeping craft of respectable gun power.

If we keep the definition of sea power constantly before us, the outline of our policy will gradually take shape and leave nothing but the details to fill in.

"CONTROL OF MARITIME COMMUNICATIONS."

What are the ocean communications that we wish to control? The unassuming British tramp steamer is found the wide world over, following certain recognised tracks, as her smart sisters, the Western Ocean liners, have their steam lanes across the Atlantic. The British Empire was built up and exists by commerce, and as the liner is the express, so the tramp steamer is the goods train of the ocean.

The steamers must be allowed to pursue their routes, the routes must be protected, maritime communications must be controlled—by men-of-war.

Now, men-of-war, as Mahan puts it, are "like land birds, unable to fly far from their shores." Resting places must therefore be found for them, depôts for coal and oil, provisions and ammunition, as the modern warship has many requirements.

These depôts must be guarded, lest others possess themselves of the accumulated stores.

The policy soon looms up; it is an old and tried plan, and the requirements for carrying it out are still at hand, though not so prepared as they were a short time since.

As General Gordon wrote 27 years ago to Lord Esher: "It is wonderful how our people do not take up the view of our forefathers. The latter took up their positions at all the salient stopping places of the great routes."[1]

"Salient stopping places" is a very happy description of the many over-sea ports which, thanks less perhaps to the foresight of British Governments than to British individual initiative, we now find ourselves possessing, and which an able foreign naval writer, Gabriel Darieus, speaks of as "a methodical grouping of stations always chosen at suitable points, by which the English Government has assumed to itself the Empire of the Seas." So much for the French view of our lately dismantled foreign dockyards.

---

[1] "The Nineteenth Century and After," June, 1908.

I make no apology for constantly quoting Mahan.

"If the war . . . . extends to distant parts of the globe, there will be needed in each of those distant regions secure ports for the shipping, to serve as secondary, or contingent, bases of the local war.

"Between these secondary and the principal, or home, bases there must be reasonably secure communication, which will depend upon military control of the intervening sea.

"This control must be exercised by the Navy, which will enforce it either by clearing the sea in all directions of hostile cruisers, thus allowing the ships of its own nation to pass with reasonable security, or by accompanying in force (convoying) each train of supply ships necessary for the support of the distant operations. Whichever be adopted, the communications will doubtless be strengthened by the military holding of good harbours, properly spaced, yet not too numerous, along the routes."[1]

The recent decision on the part of both the Admiralty and War Office to reduce their establishments at Jamaica, with the Panama Canal in actual course of construction, is quite incapable of defence. If we liken the ocean tracks of British trade to water conveyed along a series of pipes and at the "salient stopping places" where routes converge we fit throttle valves, the increase or decrease of pressure, in other words, the flow of the oversea trade stream, is under our control.

Second to none in importance will be Cromwell's Great West Indian Conquest, where the whole trade that will pour through the Isthmus into the Pacific will converge.

Our only policy, if we are to keep Command of the Sea, is to hold in sufficient force both the salient stopping places and the seas between them.

The same authority that supplied us with the definition of Command of the Sea gives us also the caution that "a line of ocean communication is vulnerable throughout its whole length."

Before proceeding further, the great difference between land and sea communications should be noted.

We know in fighting ashore that cutting the enemy's communications is generally effected by a flank movement; that in the case of a savage or undisciplined foe the operation is usually attended with immediate results; and that, under any circumstances, a force *en l'air* is generally considered to be in a position of danger.

Though, as a rule, the analogy between sea and land warfare is very complete, in this matter of communications there is a radical difference, as Julian Corbett points out, in that on land the rival communications approach each other from more or less opposite directions, whereas "at sea they are usually parallel if not identical,'' and that therefore "we cannot defend our interests without attacking those of the enemy."[1]

---

[1] "Influence of Sea Power upon History," p. 515.

Later on the enormous importance of our long line of communications will have to be considered, always with the above difference in view.

Undoubtedly we can never have too many cruising ships, but the numbers for patrolling ocean routes need not be excessive. When some Continental monarchs travel by rail, most elaborate precautions are taken for their safety, troops being stationed all along the line at certain intervals; now neither England, nor any other country, would follow this plan and place cruisers along the whole length of the lines of communication.

To quote from "The Art of Naval Warfare":—"Most lines of communication, especially the longest, may be divided into three parts, viz., one which lends itself to interruption, another on which attempts at interruption would meet with some intrinsic difficulties, and a third on which those difficulties would be much more serious and any probable profit small."

Disposal of our ships in accordance with the above three divisions, with frequent cruiser patrols in the first area, longer beats in the second, and only an occasional vessel in the third, leads to considerable saving in the number of vessels; though, of course, it by no means follows that distance from the base may not compel us to keep a disproportionate number of reliefs for the supply of the least frequented patrol.

It must be clearly borne in mind that the battle fleet is the equivalent to Mr. Haldane's "Striking Force," and that its attached cruisers will never be available for patrolling, save where their presence on the scene, when scouting, automatically fulfils that duty.

Under the term "Battle Fleet" are included all the attached cruisers, the scouts, destroyers and fleet auxiliaries.

There are no two opinions as to the duty and method of employment of the "capital ships"; they must remain concentrated, with the enemy's fleet as their constant objective, leaving to the detached patrols of unarmoured cruisers the control of maritime communications. Occupying the common line of observation, the fleet would "compel the enemy either to accept the situation or to break it down by battle."[1]

Colonial Policy.

It is the fashion with a certain school of politicians to say that England is no longer in a position to assert herself in the world as formerly, that she can no longer expect to be unrivalled afloat, that she must be prepared to see her trade decline relatively to other nations, that she has had her day, etc.

Whereas in reality our opportunities were never greater, our position never more secure, and our wealth, under Providence, never less likely to depart, if only new methods of thought follow in logical sequence the new circumstances with which we are confronted. Masses of figures carry conviction to some, and are the cause of disbelief in others, so they are best left alone when facts can be made clear without their help.

---

[1] "England in the Seven Years' War," p. 309.

The pessimists referred to above rest their belief (in cases where they genuinely hold one) on that most dangerous of supports—a half-truth.

It is true that the trade of England, speaking generally, has fallen off relatively to the rest of the world; that America and Germany are taking her place; and that if the British Empire was non-existent, the United Kingdom would not stand where it does; fortunately for us these Islands are becoming every year a smaller portion of that vast congerie of States, one-fifth of the earth's surface, which own the sway of King Edward VII.

Throw the dominions over seas into the scale, and the balance must incline heavily to our side; but without the sister nations we shall not long hold our own.

Some of us have been a long time learning the lesson, but it must be learnt if we are not to drop behind. The question does not begin or end with the Colonial Office; the Admiralty and War Office have each their own work in the matter, and that of the Admiralty is most important.

When we have a responsible Minister of the Crown, the present Secretary of State for War, hinting that perhaps England will not always be able to keep up the "Two-Power Standard," it surely points to absolute forgetfulness of Greater Britain, and cannot be accepted as "clear thinking" for one minute.

The communities omitted from his survey are among the most energetic and prosperous in existence, situated in various quarters of the globe, possessing extensive coast lines and increasing over-sea trade; to discuss a question of this nature without including the Colonies is to deal with the trunk of a body, ignoring the limbs.

In dealing with the question of Command of the Sea, it is impossible to avoid discussing empire-politics, and the appeal must be made to Greater Britain to assist the Mother country, the so-called "Weary Titan."

If the Titan has no satisfactory reason for being weary, but is really old and lazy, the more reason that the young bloods should jump into the boat of empire; under their vigorous stroke the old craft will easily forge ahead again, and keep the lead as of yore. Australia and New Zealand should understand, and show the Mother country that they do so, the vital importance Jamaica will be to their trade in the future.

The Cape is deeply interested (or should be) in Gibraltar, and should impress that interest on the Home Authorities.

No doubt Canada realises the value of Halifax and Esquimalt, and the Commonwealth and Dominion of the South Sea need no reminder about their own ports; but their glance must be further afield, and must include the long, vulnerable lines of ocean communication with the Mother country.

Geographically speaking, Canada should be the body of that huge octopus, British sea power; but many years must elapse before this could be possible.

In the meantime it is to be hoped that the Canadians will remember that, with all respect to the immortal memory of Wolfe, it was Command of the Sea that gave Canada to the Empire.

The author of "Naval Policy" has laid it down that "when the weaker force leaves the principal theatre of war and threatens other trade centres, it is an admission of inferiority."

True; but in an Empire like ours, sentiment and strategy must ever walk hand in hand.

Undoubtedly, if Dewey's ships had reinforced the American fleet in the Antilles, instead of destroying the Spanish squadron in Manilla Bay, the end of the war would have been hastened and the Philippines could equally have been the prize of an American victory off Cuba; but apply the same argument in the case of our being at war with Germany, and withdrawing the Australian squadron to help to patrol the North Sea!

No doubt the damage done by a single, raiding German cruiser on the Australian coast would be small, and would in no degree affect the final result of the war; but the damage to Imperial sentiment, caused by the Imperial strategy that left the coast and trade of the Southern Continent defenceless, would have suffered a mortal blow.

Again, the Admiralty policy of discountenancing local forces and insisting instead on Colonial contributions of men and money to the Imperial Navy is theoretically sound, and would indeed be quite admirable, if the bargain was not made with human being of like feelings and aspirations with ourselves.

Does anyone suppose that Canada would now be celebrating Paardeberg Day if the Canadians serving in South Africa had been divided among various British regiments?

Would the contingents from other Colonies in the Boer War have reached the numbers they did, had it been supposed that on their arrival they would sink their identity and be merged in British corps?

How can we expect Australians to enter enthusiastically into any naval project save one that insures their having their own ships, however small, officered and manned by their sons and maintained at the expense of the Commonwealth?

(NOTE.—Since the above was written the Admiralty have apparently agreed to a modified Australian scheme, but the correspondence betrays no anxiety on our part to hasten the birth of a sister Navy, and the phrase as to the distribution of the Imperial Navy "as the strategic necessities of the moment dictate," will probably be read by an Australian with his tongue in his cheek.)

The wonderful reception given to the American battle fleet in Australia is a lesson, if lesson is needed, of the need of British warships in the Pacific.

Once again let it be repeated that sentiment cannot be disregarded in dealing with an Empire like ours which, at all events at the present time, is only held together by sentimental ties; but sentiment apart, Australians may well be pardoned for doubting if a fleet of British battleships would ever be sent to the Antipodes so long as the Mother country has no army for home defence, and no amount of magazine articles by strategical amateurs will convince them that the "sea is all one," and that a strong naval force in the North Sea will protect them from Japan in the Pacific.

In securing control of ocean communications the policy of local Navies could be carried further with advantage, and in addition to Canada and Australia some of the Crown Colonies, notably the Straits Settlements and Hong Kong, should follow India's example and possess torpedo boat flotillas.

If the suggestion made further on (under the heading of "Bases") of employing the Royal Marines for garrisoning coaling stations were adopted, Singapore would be able, on its present budget, to substitute a battalion of 500 Marines for the infantry battalion of 1,000 men and the European garrison artillery, the money thus saved being devoted to the maintenance of a flotilla of torpedo boats, manned by Malays with European officers.

These craft would take a very important part in the defence of the harbours of Singapore and Penang (being always able to keep the sea under the conditions obtaining in those latitudes), and would supply the necessary protection in the mornings, when the prevalent mist renders the fortress guns useless.

At Hong Kong the boats would be manned by Chinamen, and in both places would be under the commander-in-chief on the station, though not liable to be employed beyond the territorial waters of the Colony.

Needless to say, the presence of these torpedo boats would not justify the Imperial Government in keeping no torpedo boat destroyers on the China Station.

FOREIGN POLICY.

The subject of Command of the Sea cannot be divorced from foreign policy any more than it can from Colonial; let us first consider the subject, so to speak, geographically.

We require access for peaceful trade through various straits of various breadths into various seas. Some of these straits we are fortunate enough to control, partly or entirely, but in most cases they are in foreign hands.

Among the last we class the Skagerrack, the Cattegat, the Sound and the Belts, the Bosphorus and the Dardanelles, Sunda Straits, etc

We have partial control over the Straits of Gibraltar and the Straits of Malacca, and have opportunities through our possessions in the West Indies of exercising a certain very limited control over the entrances to the Gulf of Mexico and the Caribbean Sea; this last must be borne in mind when the Panama Canal is completed.

We possess the Cape of Good Hope, Aden, the Falkland Islands (in proximity to Cape Horn); we have a leased port near the entrance of the Gulf of Pechili, and Hong Kong near the mouth of the Canton River.

Our policy should be so framed that in time of war access to these various seas should not be denied to us, which consequently involves being on friendly terms with the three Scandinavian kingdoms—with Holland, Turkey, and Morocco.

So far so good; but despite all conventions and Hague resolutions it may be taken for granted that in a life-and-death struggle between two powerful nations the finer points of International Law will be as flagrantly disregarded as they were in the case of the *Malacca, Knight Commander,* and other neutral ships in the Russo-Japanese war.

We must therefore be prepared for some startling developments—for the sinking of mail steamers in the Channel, capture of fishing boats, commissioning of privateers, and generally for all possible acts likely to militate against the superiority of a great naval power. These "illegal" operations are not likely to be confined to the sea, and our plans must foresee and provide against the transfer of neutral territory (with or against the wishes of its inhabitants) to a belligerent, and the harbours of neighbouring friendly Powers passing into the occupation of an active enemy. Since 1864 Denmark knows the value of English declarations and diplomatic subterfuges, and the Kiel Canal is a standing reminder to us of the retribution that overtakes shifty policy in the long run. It is to be hoped that we may not witness a strong European Power established in Tangier as the result of our recent reversal of policy in Morocco.

Von der Goltz is responsible for the phrase that "the first condition of success in war is policy."

In these days it is essential that your cause should appear to be a good one, if possible in the judgment of neutral nations, certainly in that of your own people. "Thrice is he armed that hath his quarrel just."

To put the matter in a nutshell: It is as important that the first moral attack should come from the enemy as it is that the first actual blow should be struck by yourself.

Preparation for War.

The Command of the Sea involves, therefore, a large number of cruising ships to control the long lines of ocean communications, in addition to those fit to lie in the line of battle.

What types of ships are required?

If any axiom exists in connection with the shipbuilding policy of the British Navy it is this: "No special types."

No coast-defence ships, no shallow-draught battle-ships, no commerce destroyers.

A world-wide policy requires sea-keeping ships:—

Ships for the line of battle;
Cruising ships;
Gun vessels;
Destroyers;
Torpedo boats;
Submarines, and before long, airships.

It is also apparent that Command of the Sea pre-supposes the domination of the gun.

Gun power for the strong, boiler power for the weak.

Every ship is necessarily a compromise, but excess of strength and coal capacity as opposed to excess of speed must be the attribute of the vessels which are to command the highways of the ocean. Battleships are covered by the general remark about speed, but the question of the cruisers demands more consideration.

Are armoured cruisers a success? Do they justify their enormous cost? Are they indispensable to the fleet?

The shipbuilding vote must necessarily be so large that it must be confined to vessels that are absolutely wanted. The battleship is indispensable; few will contend that the unarmoured, protected, cruising ship is not necessary in some shape or form; but what of the armoured cruiser?

Her cost is prohibitive, her duties problematical.

For instance:—The cost of the *Indomitable* is given as £1,735,357, or roughly, the price of seven *Talbots*, but ask any British Admiral (whose cry, like Nelson's, is ever for "More frigates") which he would prefer to have attached to his fleet, and I guarantee the seven *Talbots* would be the answer. The *Indomitable* is, of course, the extreme case, but the comparison might be fairly given as below:—

2 *Indomitables*, or 4 *Hampshires*, or 13 *Talbots*.

(Admitted that the *Talbots* are 13 years old, while the *Hampshires* are 4, and the *Indomitables* are new.)

Similar reasoning would suggest the substitution of modernised gunboats of the *Halcyon* or *Seagull* types—steaming, say, 23 knots—for the duties now performed by the 25 knot scouts.

The gunboats cost £60,000 to £75,000, against the £273,000 of the scouts, the latter only carrying 12-pounders to the former's 4·7-inch guns.

Again, offer your Admiral the alternative of 8 of these gunboats or 2 scouts, there would not be much doubt of the reply.

Cruisers were never more wanted than at present.

Take the composition of the present Channel Fleet and its attached:—

(First) Cruiser Squadron, unarmoured cruisers and destroyer flotilla:—

Present.	*Alternative.*
14 Battleships.	14 Battleships.
2 First-class Cruisers (*Duke of Edinburgh*).	2 First-class Cruisers (*Duke of Edinburgh*).
2 Third-class Cruisers.	2 Third-class Cruisers.
3 First-class Cruisers (Improved Counties).	15 *Talbots.*
1 *Good Hope.*	
2 *Talbots.*	
2 Scouts.	8 Torpedo Gunboats.
8	23

Here we have substituted 23 for 8. I know that it will be urged that the armoured cruisers are useful to brush aside the screen of light cruisers and push home a reconnaissance, but that only applies by day, for by night, if the destroyers fell back on the second-class cruisers, it is doubtful if the first-class cruisers of the enemy will attack them.

In the above comparison it will be noticed that the *Duke of Edinburghs* have been retained, while the "Improved Counties" have been exchanged for other cruisers; the former class are really "battleships in disguise"—to use the old description of the American frigates of 1812—and at all events are heavily armed ships of high speed, and are fairly well protected, while the "Improved Counties" have a miserable armament.

The latter cost nearly as much as the *Canopus*; we could have had 5 *Canopus* class or 17 *Talbots* in exchange for six of them—which would have been the best bargain?

The *Duke of Edinburghs* would appear to be the modern equivalent to the old "50-gun ship," and history shows us that the class in question almost disappeared under the searching test of fitness established by protracted hostilities.[1]

In war, as in all other trades, experience teaches what tools are necessary, and all others are discarded; so the question of the necessity for armoured cruisers is not an easy one to settle off-hand.

A prolonged state of war eliminates all "luxuries," but creature comforts are not so expensive as ships, and indulgence in unnecessary ship building is the costliest of extravagances.

Admiral Togo appears to have worked his armoured cruisers concentrated as a squadron, and I would hazard the belief that had he been able to have exchanged his 8 for 5 additional battleships, he would gladly have done so.

Colomb says, in "The Differentiation of Naval Force":—

"For what is plain to be seen, I think, is, that for naval warfare not a great many types of ships are required. Whether there be or be not a line of battle, there must be some fighting formation which is under all circumstances better than any other

---

[1] James' "Naval History," Annual Abstract.

The fact that a form of battle is established compels a uniformity of type of ship, because form prescribes place and prevents ships seeking their match. Therefore, it becomes waste to produce excessively powerful ships to fight in a general action, while it is a danger to allow weak ships to take part in it. In the one case the excess of power may be, most probably will be, wasted against an inferior adversary; in the other case, ships of greatly inferior force may be hopelessly beaten by those of medium or average strength."

"Then, I think, we can see that there should be an immense fall in the strength of the strongest cruiser below that of the weakest battleship. It should seem also that this strongest cruiser has her place as the eyes of the fleet, even as set forth by James, Duke of York, in his instructions. Then would come another heavy fall in the strength of the light cruiser, of which the special function is guarding our own commerce and attacking that of the enemy. I do not see that anything is gained by great variety in type."[1]

The present third-class cruisers of the *Jewel* class are useful ships, and while their gun-power is sufficient to sink a destroyer, it is weak enough to make their commanders remember that scouting and not fighting is their *rôle*.

I should prefer calling them "Advice Ships," which would emphasize their duty as "scouts" and renew an old naval term first used in 1692 before the battle off Cape La Hogue.[2]

Nothing can be said in favour of the "scouts," they are very expensive, and carry neither guns to fight nor coal to run away; in fact, it is rumoured that the officer in command of one of them asked what he should do after coming up with an enemy's destroyer, as his guns would never sink her.

Speaking broadly, excessive speed is only required in the "advice ships," as hitherto, the sea-keeping qualities of destroyers have been sacrificed for speed, the specification of only 27 knots for those recently ordered, is a distinct advance.

For making an attack with torpedoes high speed is never required in a destroyer, and when it is a question of her gun armament, her steadiness as a gun platform should be more taken into consideration.

Habitability must not be lost sight of; hulls that are merely steel shells, though admirable in theory, are fatal from the point of view of the health of the ships' companies. A world-wide Navy involves the construction of ships that must be as habitable in the tropics as in cold climates, and reckless abolition of wood conduces to a heavy sick list.

Destroyers without wood lining are unsuitable for winter work in the North Sea, and ships steaming through the Red Sea in July are apt to find their system of ventilation leaves much to be desired.

---

[1] "Naval Warfare," p. 100.

[2] James' "Naval History," Vol. III., Abstract.

The fact that so large a proportion of the best officers in the Navy put in so much of their sea service in home waters is responsible for many constructive mistakes; but while it is easier to point out the defect than to suggest the remedy, there is no denying that Portsmouth Harbour looms large in too many personal records of service.

To our sea-keeping forebears the numbers of sick in the weekly signal was the subject of keen analysis, and opinions were formed as to which captains kept their people most healthy. It was surmised that one ship was not kept dry between decks, that the hatchways of another were innocent of manropes, etc., little items in themselves, perhaps, but of great importance during the sustained strain of a long war.

Think of the sanitary orders issued by Lord St. Vincent and the marvellous health of our fleets during the long blockades of Toulon and Brest.

It was only the "habit of the sea" that insured such results, while the ships of other nations were decimated with scurvy.

The duties of the British fleet were always exacting, always spread over a large portion of the globe, and, on the whole, were done well. As a rule, defects in *matériel* have been more than compensated for by the zeal of the *personnel*.

Its duties in the future will be none the less arduous, and its operations more widespread than ever.

In addition to the battle squadrons, which will naturally be found where those of the enemy are located, there will be distant cruiser patrols enforcing the control of ocean communications.

The number of small craft required (as distinct from battleships and armoured cruisers) will be very large. History is absolute on this one point; the enormous increase in the number of small ships that has followed the outbreak of every war. Even a non-naval war like the Russian War of 1855-56 added 155 to our Navy List. Japan made use of every ship that could float, regardless of her age, and we shall have to do the same.

We must be prepared (using "we" as covering the duties of Great and Greater Britain in combination) to patrol very far afield; let it not be forgotten that in the last American war English cruisers were captured as near home as the Channel, and as far off as Tristan d'Acunha.

Taking the present Navy List, what ships have we available for distant cruising?

(For convenience in classification, it must be assumed that the South Atlantic and Pacific Stations will again come into existence.)

The former (headquarters, Falkland Islands) would require:—

1 *Edgar,*
2 *Astræas,*
2 *Apollos.*

A gunboat of the *Dwarf* class should be permanently stationed on the South American coast as well as on the West Coast of Africa.

The Pacific (headquarters, Esquimalt) would require:—

3 *Edgars*, or
2 *Powerfuls* (independent of the fishery patrol ship).

The Cape of Good Hope Station would require:—

2 *Edgars*, in addition to the present 3 ships now on the station.

For British trade in the East Indies, to patrol the long line from Perim to Acheen Head, at least two first-class cruisers would be required for war in addition to present force—say 2 *Diadems*—and the same force should be added (for war) to the Australian Station, where also the 4 armoured cruisers from China should be transferred *now*, their place being taken by 4 of the *Diadems*.

In the event of hostilities with any other Power than Japan, the armoured cruisers would be required elsewhere than in the China Seas, and they would be no use pitted against the Japanese Navy.

The *Diadems* impress the Chinamen very much with their great length and four funnels, they carry many men, and are ideal ships for the attack and defence of trade in the China Seas.

The aggressive policy of attack—whether applied to trade or to warships—must always be the one considered; when this is done defence will be more than half provided for.

NORTH AMERICA AND WEST INDIES.

Undoubtedly many more ships will be required here, but none are left to station; it is to be hoped that more will be forthcoming before the Panama Canal is completed.

WEST OF GIBRALTAR.

Here cruisers are more wanted for attack and defence of trade than anywhere else on the globe, but where they are to be taken from will depend on the nature of the enemy.

The only craft available would appear to be the cruisers attached to the Mediterranean Battle Squadron, and they could only be spared on the assumption that their fleet had left the Mediterranean.

Truly the lack of cruising ships is most lamentable.

Hitherto all references in preparation for war have been to the *matériel;* it now remains to discuss the *personnel*.

PERSONNEL.

First, to prevent possible misunderstanding, let it be remarked that I believe the members of our glorious Service were never keener, never more industrious, and never more devoted to the Navy than at present; no exception can be taken to their individual zeal and energy, but when it comes to discussing the channels into which these qualities are turned, there would appear to be considerable room for criticism.

Nowhere is the "canker of a long peace" more apparent than in the large percentage of officers employed on shore duties. The numbers are really appalling:—

Captains—128 afloat and 74 ashore.
Commanders—252 afloat and 108 ashore.

N.B.—Those not employed are not included in the above, taken from the October Navy List.

Be it remembered that the above officers do not represent those who have deliberately sacrificed professional advancement to enjoy shore life; they are mostly young and energetic and are serving with every prospect of promotion. Nay, in some cases service at a desk at the Admiralty is known to afford a better guarantee of advancement than hard work afloat.

How can this be defended in a fighting Service, trained at enormous cost to manœuvre on an uncertain element?

How can office work fit a young commander to grope his way in a North Sea fog to a previously unknown destination, or even train him in that self-reliance by which many an unknown officer commanding a gunboat on a foreign station has earned for his Service the proud distinction of being "the best diplomatists in Europe"?

How can crunching the gravel on the barrack parade ground teach the young lieutenant to command his quarters afloat, to "spot" the fall of shot from aloft, to know a trawler from a drift net fishing boat, or to instinctively measure the "advance" of his ship under full helm at high speed?

If six months ashore was the limit there would be no objection. Six months in the Intelligence Department would be a good experience for any officer, and the various war, navigation, gunnery and torpedo courses are most useful, especially the first named, whose educational value cannot be rated too highly.

The naval Service will always require to keep a certain percentage of highly-gifted officers ashore to ponder on questions of strategy and to discuss designs of war ships and weapons; but the number should be very small indeed, and sea officers should as a rule be kept jealously to their work afloat — the only place where they can learn their highly-complicated trade.

The services of the officers of the Royal Marines should be more utilised in what are in reality "side shows" in the great theatre of the sea service; for instance, the physical training of the Navy has been well started and is excellently carried out by sea officers, but it cannot be right that lieutenants should be doing shore work and the Marines would do it equally well and without the unavoidable loss of sea-efficiency.

Keep the officers and the men afloat.

No expression is more in vogue with the reporters in the daily press than the "complexity of a modern battleship," and yet we attempt to train men to handle and fight them in barracks, divorced from the commonest objects of sea-life, doing the gunnery drills in make-believe ships' batteries, and under a novel discipline.

The essence of naval discipline is, that the officers are in close touch with the men and carry out all work with them; in the Army this part is played by the non-commissioned officers: now the

Officers in the naval barracks cannot possibly know their men or be interested in them, the men cannot be expected to take that pride in the barracks that they would in their own ship—from which it follows that two great features that make for efficiency afloat are lacking in these shore establishments.

The Home Fleet life is better than that in the barracks, but that is all.

Mahan, in a crisp, easily-remembered sentence, summarises the situation: "Efficiency sapped by the easy life of port." Jurien de La Graviere says: "The pavement of the great ports is fatal to discipline."

The system of nucleus crews in the Home Fleet is good for the care of the *matériel*, but not for the *personnel*, and worse than even the manning with nucleus crews is the lately instituted scheme of ships in the Special Reserve, caretakers and shipkeepers for which should be entirely composed of pensioners. It is impossible that Active Service ratings can perform this work without deteriorating.

It must never be forgotten that in war the man, not the machine, is the winning factor, and that an out-of-date cruiser on a foreign station, if she is all that is contained in that sentence so eloquent to a naval officer—"an efficient man-of-war"—is a better school than the most modern battleship, partially manned, in a dockyard basin.

How does the great French naval historian sum up the lessons of the old war?

"Let us clearly understand that the English owed their triumph neither to the number of their ships, their plentiful sea-faring population, the strength of their Board of Admiralty, nor to the clever tactics of their great admirals. They defeated us because their ships' companies were better trained, their fleets better disciplined than our own."[1]

BASES.

"Flying bases" bear an alluring title, and at the first blush appear to possess many of the advantages, without the contingent expenses of the fixed depôts; but the torpedo boat menace puts a somewhat different complexion on the matter.

---

[1] "Guerres Maritimes sous la Republique et Empire," p. 223.

If it were merely a question of receiving coal and other stores, nothing could be simpler or cheaper than anchoring with your colliers or store ships in some previously arranged place, under such sheltered conditions as the topography of the coast would admit of, and there replenishing your stock, while your small craft scouted in the offing.

The approach of darkness would, however, be the commencement of a most anxious period, and would not improbably involve your getting under way before the object of the visit was carried out.

Modern warfare is so harassing and exacting that some protection should always be forthcoming at night, for ships anchoring to give rest to their men or to replenish their stores.

If moles and breakwaters do not exist they must be improvised, defence booms must be rigged to protect the anchorage, guns and searchlights landed for the defence of the boom; so it is not long before the "flying base" becomes a "temporary" one, even if symptoms of permanency in the shape of huts, storehouses and look-out posts do not make their appearance.

So the permanent base only will be discussed.

Bases must be fortified and garrisoned; they should be able to hold out, with their communications cut off, for the first three months after war begins, and it is suggested that a portion and, in some cases, all of the garrison, should be furnished by the corps of Royal Marines.

This suggestion naturally involves an increase in the corps, the "Sheet Anchor of the Navy," and would appear to possess certain advantages.

Frequent exchanges could then be made between the Marines serving afloat on a station and those ashore, the ships would always be able to complete their complements after an action, the wounded Marines would be landed, and on recovery would join their comrades on shore duty.

The fortress guns, or the most important of them, would be served by men who were familiar with the different types of ships: a very important point in these days of universal grey paint and of long-range firing.

The plan would give appointments for the Senior Marine Officers, which are badly required.

It would substitute seasoned men for youths in the case of the infantry of the line (and many of the bases to be garrisoned are in the tropics), and free some infantry battalions for other work.

The strength of the Marine Forces for garrisons abroad is given below:—

Gibraltar	500
Jamaica	500
Malta	500
Singapore	500
Hong Kong	500
Bermuda	500
Halifax	300
Vancouver	300
Sydney	300
Simons Bay	300
Wei-hai-wei	300
Falkland Islands	150
St. Lucia	150
Trincomalee	150
Total	4,950

It is assumed that this would involve an increase in the corps of 10,000 men.

In the case of first-class fortresses like Malta and Gibraltar only a small portion of the garrison would be Marines, but they might compose the whole garrison in the smaller bases, with the addition of, perhaps, some local forces, and be commanded by Marine general officers.

Mark what a bond of Imperial unity would thus be forged by the increase in the Marine Corps!

The 600 men at Halifax and Vancouver would be Canadians, serving their turn afloat in the North American and Pacific Squadrons.

Similarly Australia's Marines would garrison Sydney and serve in the Australian Squadron.

South Africa would furnish the garrison for Simon's Bay, and some of the detachments for the ships on the Cape Station.

There would be nothing to prevent an Australian Marine from volunteering for five years in the Mediterranean (half afloat and half in garrison at Gibraltar or Malta), or the Canadian from doing five years in the Channel Fleet or in China, it being understood that half of the period was to be spent ashore.

Officers and non-commissioned officers would be promoted on the same roster and the sea-regiment would be more widely sought after by recruits than ever.

New Zealand is not included in the scheme, as having no Royal dockyard, but the Dominion would be sure not to let that stand in the way.

It would be easy to enlarge on the advantages from a naval point of view of having our bases (at home as well as abroad) garrisoned by the Royal Marines; but any naval officer can enumerate them for himself.

Let me only remark that the change would be for the advantage for the sea service, and would undoubtedly contribute to the Command of the Sea.

The above would involve an increase in the Naval Estimates and a corresponding decrease in the Army Votes, but inter-departmental jealousy should not be allowed to stand in the way when the interests of the Empire are involved, though it is to be feared that such is often the case.

Lastly, the Governor and Captain-General of Jamaica should always be an admiral or a general of Marines.

We must look ahead and realise the coming importance of that great Island, and free our minds from cant in considering the political situation there.

At every step the close connection existing between every day politics and Command of the Sea is brought to our notice.

Thus, we read in the newspapers that in September of this year the Government of Jamaica refused to enter into a commercial agreement with Canada, preferring to deal with the United States. Yet Jamaica in the future will rank second only to Gibraltar in importance for the attack and defence of commerce, and though war between English-speaking nations has been characterised as "criminal," there is no use in disregarding the patent fact that the United States is a potential enemy, however much we may hope we may always be friends.

The Royal Corps of Naval Constructors should also be officered on an Imperial basis, and Colonials trained in the home dockyards, before taking charge in their own.

Invasion and Command of the Sea.

Let us begin with two cases of oversea invasion of England.

About 300 A.D. an inferior Continental fleet, under Constantius, slipped by the strong British fleet, under the command of Allectus—thanks to a thick fog in mid-Channel—and landed their men; yet Britain held Command of the Sea at the time.

Again, at a most critical time, the men of the British fleet had dispersed to their homes, when William of Normandy crossed over in 1066; so his landing was unopposed.

The practice of "week-end leave" is part of the regular routine of all ships in home ports now, not even half are kept ready manned.

History has a knack of repeating itself; fogs remain with us and are beyond our control; but what of the second instance?

Should it not, in the words of our Gallic neighbours, "give us furiously to think"?

We must remember that German writers do not subscribe to the doctrine that invasion is only possible when the Command of the Sea has first been obtained, and though we may consider the venture a risky one, the stakes played for are sometimes high, and the sack of London would pay the expenses of most expeditions and leave something to the good.

After all, the Germans can quote many exceptions to the rule, as instances abound in which invasion has taken place, despite the fact that a large naval force of the enemy was within easy distance, and to this day the device of "Gibraltar" borne by the Royal Marines is a standing reminder of how Admiral Rooke flouted the menace of the "Fleet in Being."

In some cases, as in the Crimean War, the Russian fleet was overawed by numbers, as no action had taken place; in others, such as the Japanese landing in Shantung, in 1895, the Chinese fleet had been very roughly handled shortly before, but was still quite capable of doing great damage to the transports and their convoy.

To come to more recent times, the Japanese threw troops into Corea in February, 1904, despite the presence of a superior force at Port Arthur, and, with increased daring, landed their Second Army in May with the Russian fleet within the easy striking distance of 60 miles from the place of disembarkation.

The Admiralty have guaranteed that they can provide against a raid of more than 10,000 men, but, as a writer in the *Morning Post* has recently pointed out, two or three small raids might be carried out simultaneously. The typical instance of Napoleon in Egypt and the Battle of the Nile is all very well, but after all the Mamelukes were defeated and Napoleon took Cairo.

Are our own theorists content to assume an English defeat and the capture of London?

Paradoxical though it may sound, one of the requirements of the Empire, if we are to retain the Command of the Sea, is the possession of an Army for home defence, not that ocean communications can be controlled by bayonets, but because a Coastguard Navy is, from its very nature, unable to protect them, and at present "our military impotency remains" "a strategical millstone tied about the neck of the Admiralty."[1]

The present situation, in which the two most powerful fleets that we possess are always kept within 48 hours' steaming of our own shores, is not only humiliating to us as a great Power, but may put the Navy in the position of a man fighting with one hand behind his back, by enormously increasing the area to be watched.

For the strategy of Drake still holds good, that our Navy, the country's first line of defence, should be off the enemy's coast watching his ports and not in proximity to our own. So the fact of not possessing an army not only insures disaster when a hostile force has actually landed, but greatly increases the odds in favour of such landing taking place.

---

[1] Lieut.-Colonel A. W. A. Pollock in *The Morning Post*, 6th October, 1908.

No doubt local torpedo boat flotillas would have a deterrent effect by night, but the cruisers escorting the enemy's transports would make short work of them by day, and nothing can really take the place of a defending army, when once the fleet has been given the slip.

Taking these facts into consideration, it will be admitted that military matters cannot be excluded from our purview when discussing naval preparation for war, and that there is no anomaly in a home army being required to insure the Command of the Sea.

CONCLUSION.

It would now be as well to summarise our previous arguments and conclusions.

Command of the Sea is control of ocean communications.

It is vital to the existence of the British Empire.

It can only be maintained by :—

a. Good policy.
b. Preparation for war.
c. Wealth.

To go down to bed-rock for a good general policy we must begin with the youth of the nation, and naval education of the masses has now become essential to sea power.

Our naval policy must follow the old lines of holding the salient stopping places now in our possession, of insuring their communications with home and with each other, of protecting our trade.

These bases should be garrisoned by the Royal Marines.

Jamaica should be strongly held, being now more important than ever.

A home army is required to free the Navy for its proper duty.

While the commerce-protecting cruisers should patrol far afield, the concentrated battle fleet should occupy the common line of communication in order to force the enemy to fight.

A large increase in the number of cruisers is required.

Harbour service is bad for the Navy.

The White Ensign should fly, as formerly, in all parts of the world.

The Dominions beyond the Seas will soon take their share of the burden, though whether with or without a share in control it is beyond the scope of this paper to enquire; but certainly Colonial representation on the Board of Admiralty will be necessary in the near future.

Our foreign policy should be run on the broad old English lines in defence of justice and freedom, for which we fought the Conqueror of Europe 100 years ago.

We should be friends with the nations controlling "the narrow seas," who are in a position to throttle our trade.

Old allies, like Morocco, should not be treated as pawns on the chess-board of high politics; England's good name should be respected, even if countries are not possessed of fleets and armies. Tangier and Tetuan were useful to us in Nelson's days and will be again; even in peace time Gibraltar gets beef from the former place.

Racial affinities cannot be overlooked, and natural alliances are firmer than those of convenience; blood and policy alike recommend friendship with the Scandinavian States, we have nothing to fear from each other, and may be able to render mutual assistance; moreover, it is highly improbable that the fleet commanded by Sir Charles Napier 50 years ago will be the last of our ships to visit the Baltic on a warlike mission.

But in reality the future of our Navy, and therefore of our Race, depends on the assistance of our kinsmen overseas; there is no fear that Britannia will fail in holding her trident if her aged arms are supported by her children.

At present all is well; the symbol of sea power can still be carried proudly aloft; but though the strength of the morning can be maintained till noon, the evening comes, when, like Moses of old, the arms must be "stayed up."

Ere the evening falls, assistance will be forthcoming.

Navies, like individuals, must walk before they can run, and it would be safe to prophesy that great countries like Canada, Australia and New Zealand will soon cease to be content with local defence forces, just as the ambitious among their sons will naturally wish for higher commands in a larger sphere.

So, in natural course of evolution, we shall presently find a Canadian cruiser in the Channel Fleet, or in the Pacific, with Australian and New Zealand additions to the China command (the *Protector* was there in 1900-1901), and perhaps a ship from the Cape joining the East Indian Squadron in performing Imperial patrol duty in the Gulf of Aden.

After the single ship will come the squadron, till we shall arrive at the fleets of the Sister Nations enforcing the Pax Britannica the wide world over, and—who can tell—perhaps a Canadian of French descent occupying St. Vincent's chair in the Board Room of the Admiralty.

THE EXECUTION AND BURIAL OF KING CHARLES I.

By the Rev. Canon EDGAR SHEPPARD, C.V.O., D.D.
(Sub-Dean of His Majesty's Chapels Royal).

On Wednesday, 17th February, 1909.
Lieut.-Colonel A. LEETHAM in the Chair.

THE portrait before you is, as you see, one of the many portraits of King Charles I. The original of this one is at the present time in the Royal Palace at Hampton Court.

In the lecture which I had the honour (by invitation) to deliver here last year, I chose for my subject, as many of you I feel sure will remember, "The Old Royal Palace of Whitehall," with a special and somewhat lengthy review of many of the events connected with it, and at the end of my lecture I dealt with the *site* of the execution of Charles I.

In my lecture to-day I am going to continue this all-absorbing subject, and give you as full an account as I can, not of the site of His Majesty's execution, but of the actual execution itself, which is without doubt the most important event in the history of Whitehall, and one of the greatest tragedies in England, and I shall hope to put before you, towards the end of my lecture, not only full details respecting His Majesty's burial, but also one or two facts connected with the opening of His Majesty's coffin in the year 1813, which are not generally known.

I must begin by telling you, what many of you already know, that the day before his trial the King was brought in a sedan chair from St. James's Palace to Whitehall, where he remained during the time that his trial lasted. "His patience or insensibility," so Harris, an old historian, puts it, "was very great."

Bradshaw, the President, it seems, "gave sentence upon His Majesty to take his head, all the Court, to the number of 67, owning to it by standing up," so says Coke, in his "Court of England."

When the trial was over, the King was conveyed back to St. James's. There he passed the remaining days of his life.

On 30th January, 1649, the fatal day—the day of his execution—Charles was brought under escort through the Park and Whitehall, some say at eight o'clock, others say at ten o'clock in the morning. He was dressed in a long black coat and grey stockings, and as a waistcoat is said to have worn a rich red striped silk. He had been placed under the charge of Bishop Juxon and Colonel Tomlinson, who, one on either side of him, accompanied him bare-headed, His Majesty walking very fast, according to Harris, and bidding them go faster, adding that he now went before them to strive for a heavenly crown with less solicitude than he had often encouraged his soldiers to fight for an earthly diadem!

Sir Thomas Herbert, in his Memoirs, published in the year 1702, informs us that "upon the King's right hand went the Bishop, while Colonel Tomlinson was on his left, with both of whom His Majesty had some discourse by the way. In this manner went the King through the Park."

Upon arriving at the spot where the Scotch Office now stands the King mounted the stairs which led up across the upper story of the Holbein Gate, and thence sought his usual bedchamber. It should here be mentioned by way of a note that the warrant for the execution was not signed till within a few minutes before the King was led to the scaffold. D'Israeli, in his "Life and Reign of Charles I.," further tells us that Cromwell stepped to a table and wrote what he had proposed to Colonel Huncks when he (Huncks) refused to sign the warrant.

Colonel Hacker, it seems, who supplied his place, signed it, and with the ink hardly dry carried the warrant in his hand and called for the King.

[I here give you a copy of the warrant to Colonel Francis Hacker for the beheading of King Charles I.]

Upon reaching his bedchamber, where he remained till Hacker summoned him to the scaffold, His Majesty at once commenced his devotions, and it seems that while thus engaged certain ecclesiastics of the Puritan party came to his room and offered to pray with him; but he refused this offer, saying "they had so often prayed *against* him, that he would not have them pray *with* him in his extremity." He, however, asked them to remember him in their prayers.

We learn that upon rising from his knees Charles said: "Now let the rogues come; I have forgiven them, and am prepared for all I am to undergo." Colonel Hacker came soon after to the bedchamber door and gave his last signal. The Bishop and Mr. Herbert (both of whom were weeping) fell upon their knees, and the King, according to Sir Thomas Herbert, gave them his hand to kiss, and helped the Bishop to get up, for he was old and infirm.

As Colonel Hacker was still attending at the chamber door the King took notice of it and said: "Open the door," and bade Hacker go, adding that he himself would follow. A guard was made all along the galleries and the Banqueting House. "Behind the soldiers," says Herbert, "were crowded abundance of men and women, though with some peril to their own persons, to behold," he adds, "the saddest sight that

England ever saw. And as His Majesty passed by with a cheerful look,'' Herbert continues, '' they prayed aloud for him, the soldiers not rebuking any of them, but by their silence and dejected faces seeming afflicted rather than insulting.''

[The picture now before you, called ''The Execution of Charles I. in front of Whitehall,'' by Mr. Ernest Crofts, gives His Majesty's arrival on the scaffold.]

''The King strode the floor of death,'' as Fuller puts it, ''with a cheerful countenance,'' and when at the scaffold is thought (says Heath) to have excelled himself, and to have died much greater than he had lived. He was attended by the Bishop, and also by Harrington and Herbert, Gentlemen of his Bedchamber.

[I here give you another view of the King's arrival on the scaffold, which I have had copied from a print in an old Prayer Book in my own possession, dated 1676.]

Upon reaching the scaffold the King donned a white satin cap, and meanwhile asked one of his executioners (there were two of them) whether his hair was in the way. Thereupon he was asked to brush it back with his own hand, and he did so with the assistance of the Bishop, to whom he said: '' I have a good cause and a gracious God on my side.''

'' There is but one stage more,'' said the Bishop, in reply, '' it will carry you from earth to heaven, and there you will find a great deal of cordial joy and comfort.''

'' I go,'' said the King, '' from a corruptible to an uncorruptible crown, where no disturbance can be—no disturbance in the world!'' Charles then again asked the executioner: '' Is my hair well?'' Then, taking off his long black cloak and giving his '' George '' to the Bishop, made use of the expression '' Remember,'' which we shall refer to later on. I should here mention, by way of a note, and to quote the words of Sir Ralph Payne Gallwey, that a ''George,'' in the sense in which it is here used, is the jewelled pendant of St. George and the Dragon which is worn by Knights of the Garter. The Sovereign is, of course, head of the Order, and Charles I. was wearing his George when he ascended the scaffold to be executed. The question afterwards arose as to what had become of it, and it has since been given up as lost. Sir Ralph Payne Gallwey, however, makes out a very good case in his new volume for identifying the missing ''George'' with one that is now in King Edward's possession at Windsor. When the King had handed his ''George'' and turned once more to the executioner, he addressed him thus: '' I shall say but short prayers and then thrust out my hands.'' This sentence he repeated twice, then, referring to the block, he added: '' You must set it fast.'' He was told that it *was* fast. Whereupon he remarked that it might have been higher, and received, as a reply, that it was impossible. '' Take care''—the King added to a passer-by at the time—''take care they do not put me to pain. Take heed of the axe; hurt not the axe which may hurt me.''

[This picture before you is called, as you see, "A View of the Place and Manner of the Execution of King Charles I.," and, as you also see, there is a copy of the warrant to Colonel Francis Hacker for beheading His Majesty, which I have already shown to you.]

His Majesty then took off his doublet, put on his cloak again, and afterwards made a speech, which seemed much broken and confused in many places, in which he asserted his own innocence.

Having made a declaration of his faith at the request of the Bishop, King Charles knelt down, and was about to lay his head upon the block, when one of the executioners stooped down to put His Majesty's hair under his cap, so that it should not impede the force of the blow. The King misunderstood this act of the headsman's, and thinking that the fatal blow was about to be delivered, asked the man to await the sign, whereupon there ensued another short pause, during which the King spoke a few words, and *then* stretched out his hand, and the Royal head was instantly severed from the body, upon which (in sight of the great crowd that had gathered about the scene) the second executioner lifted up the King's head and exclaimed: "Behold the head of a traitor."

The scene upon the scaffold is thus described in the journal of the Earl of Leicester in the Sydney papers:—

> "The King," he says, "being come upon the scaffold, looked very earnestly upon the block, and asked Colonel Hacker if there were no higher, and then, having made a profession of his faith, laid his head down, and the executioner, at one blow, severed it from his body, which the second executioner held up and showed to the spectators. The executioners," the journal continues, "were two, and, disguised in sailors' clothes with vizards and peruques, unknown."

[This picture before you gives the death of King Charles I., and is from an old print belonging to this Institution.]

Charles died (says Rapin) "with great constancy, without showing the least sign of weakness or amazement," while thus (says Sir Richard Warwick), "this saint and martyr rested from his labours and follows the lamb."

Immediately after the execution, the crowd was dispersed by cavalry, and it was thought advisable that the scaffold and everything connected with it should be cleared away as soon as possible. The Bishop and Mr. Herbert went with the body to the backstairs, where it was embalmed by one Topham (private Surgeon to Fairfax), who had previously sewed on the King's head to the body again.

After his execution (according to Clarendon in his "History of the Rebellion and Civil Wars in England") we learn that King Charles' body was, as we have already stated, carried immediately after his execution into a room at Whitehall, where (after the process of embalmment had been carried out) he was exposed for many days to the public view, that all men might know that he was not alive.

The body was then carried to St. James's, where again it remained for several days.

"Where to bury the King was the last duty remaining," says Wood in his "Athenæ Oxonienses." By some historians it is said that the King spoke something to Bishop Juxon concerning his burial. Mr. Herbert, however, who was Groom of the Bedchamber, and a faithful companion of the King, was frequently in company with the Bishop, both before and after His Majesty's death, and he affirmed that the Bishop never mentioned anything to *him* of the King's naming any place, where he would wish to be buried. Be that as it may, it was eventually decided to bury His Majesty's body in the Royal Chapel of St. George, within the Castle of Windsor, both because His Majesty was Sovereign of the Order of the Garter, and also because several kings had been interred there, among them Henry VI., Edward IV., and Henry VIII.

Mr. Herbert having made application to the Committee of Parliament, an order was given to him (bearing date 6th February, 1648), authorising him and Mr. Anthony Mildmay to bury the King's body there, provided that the whole expense should not exceed £500. Accordingly the corpse was carried to Windsor, from St. James's Palace (on 7th February) in a hearse covered with black velvet, drawn by six horses, covered with black cloth, in which there were about a dozen gentlemen.

On arrival, Mr. Herbert showed to Colonel Whitchcot, the Governor of the Castle, the Committee's order for permitting Mr. Herbert and Mr. Mildmay to bury His Majesty in any place within the walls of Windsor Castle, that they should think fit.

When they had done this, they carried the body (in the first place) into the Dean's house to the room now called the dining room, which was hung with black, and it was placed on the table which is still there in the middle of the room, and then later on they carried it thence to His Majesty's usual bedchamber in the Castle, where for the time they deposited it. When this had been done they then went to St. George's Chapel to find, as Wood describes it, "the most fit and honourable place for the Royal body to rest in."

At first they thought that the Tomb House (built by Cardinal Wolsey) would be the most fitting, but that place, though adjoining, was not *within* the Royal Chapel, so the idea was given up. They next pitched upon the vault where Edward IV. had been interred on the north side of the choir, near the Altar, as that King was one from whom Charles I. was lineally descended.

Orders were accordingly given to have that vault opened; but just as they were about to begin this work the Duke of Richmond, the Marquis of Hertford, and the Earl of Lindsay came upon the scene, and with them Bishop Juxon. Bishop of

London, who, by the bye, had had leave from Parliament to attend the King's body to his grave.

They visited the Tomb House and the vault just referred to, and the choir (together with Herbert and Mildmay), when one of those noble lords, according to Wood, "beating gently upon the pavement in the centre of the choir with his staff, perceived a hollow sound," and the stones and earth being removed, they discovered a descent into a vault where two coffins were laid near to one another, the one very large, of an antique form, and the other little. These they supposed to be—and indeed they were—the bodies of Henry VIII. and Jane Seymour, his third wife. The velvet palls that covered their coffins seemed fresh, though they had lain there for more than one hundred years.

It was finally agreed that the King's body should be interred in *this* vault, which was situated, as I have said, about the middle of the choir.

While the men were at their work in cutting in lead the King's name and the year of his death, for which orders had been given, the three noble lords went out and gave instructions to the sexton (Puddifant by name) to lock the door of the chapel and to allow no one under any pretext whatever to enter. It afterwards transpired, however, that a soldier had hidden himself in the building and (to quote Wood once again), "being greedy of prey, crept into the vault and cut so much of the velvet pall that covered the great body as he thought would hardly be missed, and bored a hole through the said coffin, fancying there was something well worth the venture."

The sexton later on, on opening the door of the chapel, discovered the man, who being searched was found to be in possession of a bone. The Governor having been informed gave this sexton a reward, and the Lords Commissioners and others present were thereupon convinced that a *real* body was in the said coffin, which some had previously doubted. The only words, and they were, as we have said, executed in lead, on the lid of the King's coffin were these: "King Charles, 1648."

When all the many preparations had been completed, the King's body was forthwith brought down from his bedchamber to St. George's Hall, and after a little delay slowly and solemnly carried in procession into the choir of St. George's Chapel by "gentlemen of quality" (as an old historian puts it), "dressed in mourning"; the noblemen, also in mourning, held up the pall, and the Governor and several gentlemen and officers and attendants came after.

[I now give you a copy of Mr. Ernest Croft's picture of the "Funeral of King Charles I.," and the arrival of the body at the west front of St. George's Chapel.]

The body was set down by the bearers near the place of burial, and the Bishop of London stood ready, with the Service book in his hand, to perform his last duty to the King, according to the order and form of the Burial of the Dead, as set forth in the Book of Common Prayer; but Colonel Whitchcot, the

Governor of the Castle would not allow it. And this is borne out by Clarendon in his "History of the Rebellion," which we have already quoted, where we read that "the King's body was laid in the vault without any words or other ceremonies than the tears and the sighs of the few beholders."

When the coffin had been lowered the black velvet pall that had covered it was placed over it, and the earth was thrown in, which the Governor stayed to see perfectly done, and then took the keys of the chapel.

"Thus," said Wood, "went the white King to his grave in the 48th year of his age and the 22nd year and 10th month of his reign."

Here the coffin remained undisturbed till the year 1813, when, on 1st April, by order of the Prince Regent, it was opened for the purpose of identification, and it is interesting to note that when the mausoleum, which was built in the Tomb House, as it was then called, and Albert Chapel now, was completed, it was necessary to form a passage to it from under the choir of St. George's Chapel. In constructing this passage an aperture was made accidentally in one of the walls of the vault of Henry VIII, through which the workmen were enabled to see not only the two coffins which were supposed to contain the bodies of King Henry VIII. and Queen Jane Seymour, but they also could see a *third,* covered with a black velvet pall, which, from Mr. Herbert's narrative, might fairly be presumed to hold the remains of King Charles I.

On representing the circumstances to the Prince Regent, His Royal Highness perceived at once that a doubtful point in history might be cleared up by opening this vault, and accordingly orders were given for an examination to be made on the first convenient opportunity. "This was done," says Sir Henry Halford, who was the King's chief physician, "on the 1st of April last," *i.e.,* in 1813, the day after the funeral of the Duchess of Brunswick, in the presence of His Royal Highness himself, who was accompanied by the Duke of Cumberland, Count Munster, the Dean of Windsor, Benjamin Charles Stevenson, Esq., and Sir Henry Halford.

On removing the pall a plain leaden coffin, with no appearance of ever having been enclosed in wood, and bearing in large legible characters on a scroll of lead encircling it, an inscription, "King Charles, 1648," immediately presented itself to the view. A square opening was then made in the upper part of the lid, of such dimensions as to admit a clear insight into its contents. These were found to be an internal wooden coffin (very much decayed), and the body, carefully wrapped up in cere-cloth, into the folds of which a quantity of unctuous or greasy matter, mixed with resin, as it seemed, had been melted, so as to exclude as effectually as possible the external air. The coffin was completely full, and Sir Henry Halford tells us that "from the tenacity of the cere-cloth, great difficulty was experienced in detaching it successfully from the parts which it enveloped." When this came off, a correct impression of the features, to which it had been applied, was observed in the unctuous substance. At length the whole face was disengaged from its covering. The complexion of the skin of it was dark and discoloured. The left eye, in the first moment of exposure, was open and full, though it vanished almost immediately, and the pointed beard, so characteristic of the period of the reign of King Charles, was perfect. The shape of the face was a long oval, and a part of the nose had completely disappeared. Many of the teeth remained, and the left ear, in consequence of the interposition of the unctuous matter between it and the cerecloth, was found entire.

When the head had been entirely disengaged from the attachments which confined it, it was found to be loose, and without any difficulty was taken out and held up to view. It was quite wet, and gave a greenish-red tinge both to paper and to linen which touched it. The back part of the scalp was entirely perfect and had a remarkably fresh appearance. The hair was thick at the back part of the head and was in appearance nearly black. The hair of the beard was a redder brown. On the back part of the head it was more than an inch in length. On holding up the head to examine the place of separation from the body, the muscles of the neck had evidently retracted themselves considerably, and, to quote Sir Henry Halford again, "the fourth cervical vertebra was found to be cut through its substance *transversely*, leaving the surfaces of the divided portions perfectly smooth and even—an appearance which could have been produced only by a heavy blow inflicted with a very sharp instrument, which furnished the *last* proof wanting to identify King Charles I.

[I here place before you a photograph of a sketch, by an unknown artist, taken at the time when His Majesty's coffin was opened in 1813.]

After this examination of the head (which served every purpose in view), and without examining the body below the neck, it was immediately restored to its situation. The coffin was soldered up again and the vault closed.

On examining the vault with some attention it was found that the wall at the west end had at some period or other been partly pulled down and repaired again, not by regular masonry but by fragments of stones and bricks put rudely and hastily together without cement.

Having given you this account of the opening of the King's coffin in the year 1813 and of all that took place at the time, we must pass on now to describe the replacing of certain relics in this grave of Charles I.

On Tuesday, 11th December, 1888, 75 years afterwards, the Prince of Wales (our gracious King, Edward VII.), then on a visit to his mother, Queen Victoria, at Windsor Castle, sent for the then Dean of Windsor, Dr. Randall Davidson (now Archbishop of Canterbury) and showed him a small ebony casket. His Royal Highness told the Dean that this casket (which, by the bye, measured $4\frac{3}{4}$ inches in length, $3\frac{3}{4}$ inches in width, and $2\frac{1}{4}$ inches in depth) contained certain relics believed to be part of the body of King Charles I.

[Here give again portrait of Charles I.]

It would seem probable, though it is not mentioned in the published Memorandum, that Sir Henry Halford, in the year 1813, when the coffin was opened for inspection, removed on this occasion certain articles, viz.: (1) A portion of the cervical vertebra, cut transversely with some sharp instrument; (2) a portion of the beard of the King (of auburn colour, with a bit of linen sere-cloth attaching to it; (3) a tooth. These relics, it seems, had come into the possession of Sir Henry Halford's grandson, Sir Henry St. John Halford, and had been by him presented to the Prince of Wales, in a small ebony box, which contained inside the lid an inscription engraved on a plate. When the contents of this box were examined it was discovered that the portion of beard and the tooth (already referred to were wrapped up in a piece of stained writing paper addressed thus: "The Honble. and Most Reverend the Dean of Windsor," which would seem to show that Dean Legge (who was Dean at the time) had in 1813 known of this abstraction of the relics, and had furnished a piece of paper at the moment in which to wrap up the beard and the tooth.

The Prince of Wales told the Dean that it was *his* wish to replace these relics in the vault or grave from which they had been abstracted, and, Queen Victoria's consent having been obtained, it was arranged that the relics should be replaced by His Royal Highness on the following Thursday, 13th December.

On the evening of Tuesday, 11th December, the Prince of Wales came to the Deanery and handed to the Dean the ebony casket, in which His Royal Highness placed an *autograph memorandum* in the following terms: "These relics of King Charles I. are deposited by Albert Edward Prince of Wales in the vault containing the coffin of the King on 13th December, 1888."

In the meantime the Dean of Windsor had had a leaden casket prepared, *10* inches long, *4* inches high, and *5* inches wide, and on the lid of this leaden casket the following inscription was engraved: "The relics enclosed in this case were taken from the coffin of King Charles I. on 1st April, 1813, by Sir Henry Halford, Physician to King George III. They were (by his grandson, Sir Henry St. John Halford) given to His Royal Highness Albert Edward Prince of Wales. On 13th December, 1888, they were replaced by His Royal Highness in this vault—their original resting place."

This casket was again enclosed in a stout oaken case, fitting closely. The small ebony box containing the relics was carefully deposited by the Dean within the leaden casket, and the oaken case containing all was firmly closed with screws.

On Thursday evening, 13th December, at six o'clock, after the close of evening service, the Dean of Windsor, with the two Canons, who happened to be in residence at the time, superintended the removal of the pavement stones above the vault. This was done, with the utmost care and reverence, by Mr. A. T. Nutt, surveyor to the Dean and Canons, and three workmen, and occupied a very short time. The vault is in the centre of the choir of the chapel, and *six* of the small squares of black and white marble on the south side of the pavement in this portion of the choir were lifted, and then the mortar that lay between them and the brick arch of the vault was removed. About 20 bricks were then taken out with the greatest care, so that no debris should fall on the coffin beneath. By this means an aperture of about 18 inches square was produced immediately over the centre of King Charles's coffin, which was covered still with a black velvet pall. The form of the coffin beneath it, which was of the usual plain oblong shape, was distinct.

The Prince of Wales came alone to the chapel soon after 7 p.m., and in the presence of the Dean of Windsor, the two Canons, and the surveyor, His Royal Highness lowered down the box containing the relics through the aperture, and placed it carefully about the centre of King Charles's coffin.

When the Prince had retired, the workmen came back again into the chapel, the aperture into the vault was at once re-closed, and the marble pavement re-laid, no one entering the vault. The whole operation was completed by 9.30 p.m. From the beginning to the end of what was done, everything was *personally* superintended by the Dean and the two Canons present, all of whom remained by the side of the grave till all was completed.

Having given you these details of the execution and burial, let me, in conclusion, pass on to one of the *debatable* points in connection with this tragedy. And, first of all, one of the most interesting of these is the meaning to be attached to the word "*Remember,*" which the King, when upon the scaffold, addressed to Bishop Juxon after he had handed to him his medallion of St. George.

With regard to the vexed question of the *meaning* of this injunction "Remember," it has been suggested that King Charles used the word in reference to Queen Henrietta, from the fact that this jewel contained a portrait of her. Miss Strickland, in her "Lives of the Queens of England," after stating that the King handed to the Bishop the medallion containing the miniature of Henrietta, says: "The warning word, which has caused many historical surmises, evidently referred to the fact that he only had parted with the portrait of his beloved wife at the last moment of his life."

In the 8th series of Notes and Queries, May, 1894, the following appears over the signature "William Norman":

"In a quaint little book," he says, "called 'Medulla Historiae, Anglicanae' (printed in London in 1694, the lives and affairs of the Stuart Kings (1603-1688) occupy about one half of the work. With reference to the speech with which the King is said to have accompanied the 'George,' the following account is given : " Then the King asked the executioner : ' Is my hair well ? ' "And, taking off his cloake and 'George', he delivered his ' George' to the Bishop, saying 'Remember to send it'—that is, to the Prince. This seems to be a *new* suggestion," says Mr. Norman, " and is as if it were intended to remind the Bishop of some *last* message which the King wished to have carefully delivered to his son and heir—a very likely thing to have happened under the peculiar circumstances."

Mr. Gardiner, the distinguished historian, also thinks that the King addressed that *one word* to the Bishop probably to impress on him the importance of delivering the messages to the Prince and others with which he had already charged him.

Another much disputed point in connection with this tragedy is the *identity* of the two men who took part in King Charles's execution.

We know that they donned "vizards," wore false hair, and were dressed as sailors, and thus they were effectually disguised. Immediately after the Restoration the Government made an effort to discover these masked headsmen ; but we do not learn that they ever succeeded in doing so.

Some historians think that the blow was struck by a Captain Foxley, since the public executioner, Richard Brandon, had refused to perform the task.

We hear also that a certain *Henry Porter* was charged with the act. This man had been imprisoned in Dublin for two years, when Lord Ormonde and the Council of Ireland requested Secretary Bennett "to move His Majesty (Charles II.) that the said Henry Porter (standing charged, as he was, as being the person by whose hand the head of our late Sovereign King Charles I. was cut off) should be brought to trial in England."

Tradition again has attributed the deed to one *William Walker,* who died near Sheffield in 1700, after having at the Restoration retired from political life. The tradition, however, rests on no substantial foundations. Nor does the vague evidence of Colonel Hacker help us much. This Colonel Hacker had for a time in his possession the original warrant for the execution. He (so we learn from a communication in "Notes and Queries"), when he was asked who struck the blow, replied that he knew not, but that he had heard it was the "Major." He said, however, that he would endeavour to ascertain ; but whether he ever did so, or who the said "Major" was, we are unable to state. But in spite of the foregoing evidence, which, indeed, amounts to little more than the idle gossip likely to spring up on such a subject, the probability is that the King *was* beheaded by the ordinary executioner, Richard Brandon.

From Ellis's " Original Letters " and from Wraxall's " Memoirs," we learn that Brandon *confessed* that he had received £30 within an hour after the blow was given for his pains, which was all paid in half-crowns; and further, that he had an *orange,* stuck full of cloves, and a *handkerchief* which had come out of the King's pocket so soon as His Majesty was carried off from the scaffold, for which orange he was proferred 20s. by a gentleman in Whitehall, and though at the time he refused the same, yet he afterwards sold it for 10s. in Rosemary Lane.

Mr. Jesse, gathering his information from Cunningham's Handbook of London, gives us some interesting details concerning this man Richard Brandon. The following entry appears about him in the Burial Register of the Parish of St. Mary, Whitechapel. The entry runs as follows: "1649, June 21st, Richard Brandon, a man out of Rosemary Lane." To which the following significant note is added below: "This Richard Brandon is supposed to have cut off the head of Charles the First."

We pass on now to another doubtful point.

In regard to the block on which the King's head rested and the mode of execution, about which opinions have largely differed, a correspondent (giving the initials S.M.S.) sent the following some few years back to "Notes and Queries." He says: "A note worthy the attention and the investigation of any interested in the subject of the execution of Charles I. is given in Warburton's 'History of Prince Rupert and the Cavaliers' (Vol. III., p. 460), where it is stated that 'the block was so low the King was forced to lie on the ground.' I have seen two prints of the time," he continues, "in which the king is thus represented. This has not," he adds, "been generally noticed."

In the year 1890 a correspondence took place in the *Times* newspaper respecting this subject, viz., the method of execution adopted in the case of Charles I. The late Sir Reginald Palgrave (Mr. Palgrave as he then was) wrote as follows: "Did King Charles at the last moment kneel down and bend his head over the block, retaining in other respects an upright position? On the contrary, *I* venture to assert," he adds, "that to receive the headsman's blow, the King first knelt down and then stretched himself at full length upon the scaffold, and rested his back across a bar of wood, in height about six inches. It was the customary practice," he continues, "and the scaffold was prepared to afford the sufferer some comfort in that wretched position."

Mr. Palgrave then goes on to say that this is shown by the description in the State trials of the death of the Duke of Somerset in January, 1552, and of Lady Jane Grey, and he endeavours to show that the execution of Charles I. was carried out in conformity with what he calls the *Tudor* method, which compelled the sufferer to lie at full length upon the scaffold. At the same time, Mr. Palgrave admitted that he could derive no help from any contemporary account of the King's demeanour on the occasion, since all that we are told is that, "stooping down, he laid his neck upon the block."

To this letter of Mr. Palgrave's the late Lord Carnarvon, the fourth earl, on 12th May, 1890, wrote the following reply, which *also* appeared in the *Times*: "With your permission," he said, "I desire to offer a few observations on Mr. Palgrave's *remarkable* theory of the mode of execution adopted in the case of Charles I.—a theory based upon the doubtful use of the word 'lying' in two or three instances. I confess," says his lordship, "that without further guidance I cannot accept his view, that the historical 'block' was a low rail six inches high, and that the kneeling and dignified attitude of the martyr King in his last moments was the grovelling position which he (Mr. Palgrave) describes. In the Stuart and Georgian reigns, down to 1745," continues Lord Carnarvon, "I imagine the block to have been what the word indicates, and in the Tudor times, of which Mr. Palgrave speaks, more evidence is needed than any which has been given to show that the practice was different. There used to be preserved in the Tower," Lord Carnarvon goes on to say, "a hideous block of considerable size and height, on which it was *said* that the 'swan neck' of Anne Boleyn was laid, and on which many other noble victims perished. In the memorable case of Charles I., there is a curious account of the execution," he continues, "which, whether true or false, deserves to be cited. It is to be found in one of those interesting reports which the Venetian envoys (accredited to England) made to the Senate of Venice of all matters of note. In 1654 the Venetian Senate sent an embassy to this country, and in 1656 the then Ambassador, Giovanni Sagredo, laid before them a report of the Great Rebellion, its causes and results, and the character of the Protectorate. 'The scaffold,' the Ambassador says, 'was raised level with a window of the Palace and hung with black velvet; and (because they were afraid His Majesty might resist the execution of the sentence and might refuse to lay his neck on the block) two iron rings were fastened to the foot of the scaffold, through which a cord was passed, to be placed round His Majesty's neck, and so to compel him to extend his neck to the axe, should he refuse to bow to the fatal blow.' He added," concluded Lord Carnarvon, "that the King warned in time, agreed to yield to the law of necessity, and died 'with constancy.' This account, so far as it goes," says Lord Carnarvon, "neither impairs nor confirms Mr. Palgrave's theory."

On the day after this letter of Lord Carnarvon's had appeared in the *Times* came one on the same subject from Lord Rosebery, dated 13th May, 1890, and in this letter his lordship says: "I have a picture in Scotland of the execution painted by an eye-witness. He was a Dutchman who left England immediately afterwards, declaring that he could not live in a country which had killed its King. The painting represents the King in the attitude suggested by Mr. Palgrave. The head had just been cut off, and is being held up by an executioner who is in a mask resembling human features, not a black mask. In each corner are medallions," continued his lordship, "one a portrait of Charles, one a portrait of Lord Fairfax holding an axe, one of the King walking to Whitehall, and one of the people dipping their handkerchiefs in his blood."

[I am now able, by the kindness and courtesy of Lord Rosebery, to place before you a copy of this print, already referred to, which his lordship has been good enough to allow me to have copied from his collection at Dalmeny.]

On 14th May, 1890, a certain Mr. Louis Fagan continued this correspondence, and wrote that "in a perfect diurnal of some passages in Parliament, and the daily proceedings of the Army, under His Excellency the Lord Fairfax, dated Tuesday, 30th January, 1648, page 2317, line 21, we read as follows: 'After which the King, stooping down, laid his necke upon the blocke, and after a little pause, stretching forth his hands, the executioner, at one blow, severed his head from his body.'"

It will be remembered that iron staples were mentioned just now which had been driven into the sides of the block in order to bind down the King in the event of his showing any resistance, and the suggestion has been made that from these staples, or the marks of them the block might be identified if it is still in existence.

Again, *à propos* of the block, an anonymous correspondent, "D.B.," in "Notes and Queries" (Third Series, Vol. XI., January, 1867) writes: "I was lately informed," he says, "on seeing a picture of a Lady Jane, that she was married first to Bishop Juxon, Chaplain of Charles I., and that on her death at Little Compton, near Chipping Norton, the block on which Charles I. had his head cut off was sold."

Some time ago a further correspondence took place in the *Morning Post,* but this time regarding the present whereabouts of the *axe* which was used when King Charles was beheaded.

A certain Mr. William Chapman stated that Giles Dekker was the executioner, that the axe was granted to *him* by Parliament, and that upon his death the instrument went to his son, who exhibited it at his tavern in Lambeth. This fact, having come to the King's ears, the axe was confiscated, and James II. became its custodian, who, when he fled the kingdom, took the axe with him to France.

Upon his death, Louis XIV. became the possessor of the instrument, and later on it fell into the hands of the Regent Orleans, who sold it to Ferdinand King of Naples. Finally the relic was deposited in the Museo Borbonico at Naples, where it still remains.

It would appear, however, from another correspondent that nothing is known whatever of the axe at the Museum in question, and that it could never have been deposited there; other correspondents also dispute Mr. Chapman's story, and we may, I think, conclude that *if* the instrument were at the Museum at Naples, proof of the fact would have been forthcoming.

I now conclude my lecture of to-day. I am sorry not to have been able to give you more illustrations bearing upon our subject, for they always lighten a lecture so considerably; but then, where is it possible to obtain such views? I have, however, done my best, and I hope you will consider that I have been fairly successful in my efforts.

What views you have seen have been taken from prints, except in three instances, belonging to the collection here. These have been most generously lent to me for reproduction by the Council of this Institution. Of the three special views referred to, two are from pictures by that well-known artist and Royal Academician, Mr. Ernest Crofts, and the third is from a picture in the possession of Lord Rosebery, and I wish to express my most grateful thanks not only to his lordship for his kindness in sending down to me from Scotland that picture, a copy of which you have seen, but also to Lord Winterstoke for his kindness in allowing a photograph to be taken of one of Mr. Crofts' pictures, "The Funeral of King Charles I. at Windsor," which has been given by his lordship to the Bristol Art Gallery.

I feel much indebted also to Mr. Ernest Crofts for permission to reproduce his two pictures here—the one already mentioned and a second one entitled "The Execution of King Charles I. in Front of Whitehall," and which, as I am led to understand, he still retains in his own possession.

You will allow me, I feel sure, before concluding, once again to assure the Council of this Institution how greatly I appreciate the honour which they have done me in asking me to undertake this delightfully pleasant duty this afternoon, and I should further wish to thank and express to Lieut.-Colonel Leetham my indebtedness to him for finding the time to preside on this occasion, and may I add also to you for the attention which you have given me.

Captain B. E. SARGEAUNT (12th Battalion The London Regiment):—I should very much like to ask Canon Sheppard if he can give an explanation of the disagreement which exists as to the date of the execution. One often comes across the date 1648 and also that of 1649, on old engravings and documents, and that is a question of very considerable importance when trying to identify the executioner. Richard Brandon, it is recorded, was paid £30 for the execution within an hour of the deed; he went home to Rosemary Lane and offered the money to his wife, who declined it, at the same time expressing her contempt for him at what he had done. It is, moreover, recorded that all Brandon's friends were very hostile towards him afterwards. He fell sick and gradually wasted away, dying on the 20th June, 1649. I do not think you mentioned the date of his death, sir, in your paper.

Canon SHEPPARD:—No, I did not; it is news to me.

Captain SARGEAUNT:—His death seems to have been entirely due to the matter of the execution of the King preying on his mind. He was buried in Whitechapel Churchyard, and on his tombstone the date of 20th June, 1649, was inscribed. The question of the disagreement of the date in old documents is rather interesting in that connection, because it seems that Brandon's death was more or less directly the result of the execution, especially if it occurred only four months after the death of the King, which was in 1649.

Canon SHEPPARD :—That is very interesting. I have always been led to understand that 1649 is a mistake, and that the real date is 1648.

Captain SARGEAUNT :—Do you think that the 20th June, 1649, on Brandon's tombstone was a mistake, and meant for 20th June, 1648?

Canon SHEPPARD :—No doubt 1649 is right for Brandon's death, but I do not think there is any doubt that the execution took place in 1648. The fact that Brandon died on the 20th of June, 1649, would rather bear out the fact that the execution was in 1648. All the old historians, whose books I have looked up, give 1648. I am very grateful to you for telling me what I did not know.

Commander W. F. CABORNE, C.B. :—How is it that nearly all the historians record 1649 as the date of the death of King Charles I.? I have a facsimile of the warrant, which is dated 1648, but I have noticed many times in other histories that the date is recorded as 1649.

Captain SARGEAUNT :—I think 1649 is the more usual date. Lord Rosebery's picture of the execution, which Canon Sheppard showed to us, is dated 1649.

Canon SHEPPARD :—That is very curious indeed; it puts me up a greater tree than ever. I am afraid I cannot explain it. The few books that I have looked up give the date as 1648.

Mr. CHALLIS :—Is not the explanation with regard to the discrepancy in the date the fact that the official year commenced in March? so that the months from January to March might sometimes be put in one year and sometimes in another. Whether the date was 1648 or 1649 depends on the way that was reckoned.

GERMAN TENDENCIES WITH REGARD TO THE PREPARATION AND DEVELOPMENT OF AN ACTION.

By Captain F. CULMANN, of the French General Staff.

Translated for the General Staff from *Choses d'Allemagne,* 1908.
By kind permission of the Author.

Continued from July JOURNAL, p. 931, and concluded.

CHAPTER II.

THE BATTLE.

Deployment and Preliminary Action.

AS soon as an action has become imminent, the German columns break up, and brigades, regiments, and even battalions, making the utmost use of the roads and communications available, or marching across country, "are diverged obliquely to various points as the necessities of the battle may require, and to spare the men by keeping them in this formation as long as possible." This method is mentioned in the regulations as being "the best" way of taking up a fighting formation from the order of march. Its advantages are the rapidity of opening an effective fire and of advance upon the enemy, thus allowing him no time to reconnoitre his own position—essential conditions in every preconceived operation and in an encounter combat.

The *rôle* of the advanced guards of the columns ends as soon as the actual combat begins. "The *rôle* of an advanced guard as such comes to an end," says Griepenkerl, "at the moment when the commander of the detached force decides to carry on the fight with the whole of his troops. . . . The advanced guard is only a means of security during the march; it is therefore only justified when on the march, or, perhaps, as an exceptional case, when it can itself engage an enemy of inferior strength."[1]

The character of the opening stages of an engagement varies according to whether the enemy has any desire to assume the offensive, or whether he occupies a defensive entrenched position. All the German regulations distinguish between the two cases and lay down particular rules for each of them. But would it be possible to be certain beforehand which of the two attitudes the enemy is determined to adopt? Is the distinction merely theoretical or does it reply to actual conditions? The Germans incline to the latter view; they apparently consider—doubtless not without good reason—that the indications furnished by their cavalry and their service of spies, the general situation, the state of the enemy's *moral,* and immediate events will enable them to have the proper information in ample time to make a decision suitable to the circumstances. Did not the Japanese in Manchuria and Moltke in 1870 at St. Privat know that the enemy had taken up their position and entrenched it? Be this as it may, it is useful to show how, according to their regulations, the Germans expect to open the battle in different ways according to the supposed intention of the enemy.

---

[1] Tactical Exercises, 13th Letter.

1. *The Encounter Combat.*[1]

The officer commanding must imbue himself with the following principles: "*On becoming engaged, that side will have the advantage which gains the start over its opponents in readiness for action and thus gains the benefit of the initiative. The artillery may be of material assistance to the officer commanding by the quickness with which their dispositions are made and by their power of rapid movement.*

Any knowledge of the ground or of the enemy which can be obtained, has considerable influence in the selection of the time, the manner, and the locality suitable for the engagement. If the enemy is met with before sufficient information can be obtained, then the *general situation* determines whether an attack shall be made or not. If the commander decides to attack, he must act with promptitude.

"*The commander should not await the results of a more complete reconnaissance in order to decide. He should remember that the enemy is no better prepared to fight than he is.*"

The main point is to be beforehand with the enemy. For this reason the first essential is for the commander to rapidly make up his mind, without waiting for further information: for it must be remembered that if he delays for the sake of further information he is only subordinating his intentions to those of the enemy.

The object of the Germans is to strike hard to avoid a partial check and to subordinate the enemy's will at the first onset. This necessitates the disposal of powerful means, and to collect the latter requires time, even when troops are moving in numerous columns. The first stand-by of the Germans are the batteries *en masse* which have been systematically brought up. The artillery is in fact the arm which can best rapidly form a powerful barrier behind which troops can be assembled: it can, moreover, perform this duty without ceasing to be at the disposal of the commander of the force and, consequently, without hindering his liberty of action. But the deployment of these batteries requires time: so, as superiority in numbers is the most certain gauge of superority of fire—even with quick-firing guns protected with shields—the artillery brigades which first come into position will avoid opening fire, if they think they are too weak and will only act to protect the infantry. "The batteries will take every advantage of the ground and will leave the enemy in doubt as to the situation by taking up covered positions and by judicious distribution." They will not open fire "except on the order of the senior officer present with the advanced guard"; this will be in the generality of cases the officer commanding the column himself.

---

[1] *See* Infantry Training Regulations, Art. 351-361; Artillery Training Regulations, Art. 475-482, Machine Gun Training Regulations, Art. 242.

Extracts from the different regulations are printed together, but they are easily distinguished.

The advanced guard will fight on a wider front than that ordinarily allotted to a force of its size, so as to seriously engage the enemy. It will be disposed in groups more or less detached, which will occupy by preference those portions of the ground the possession of which will most protect the deployment of the main body. It will be assisted by detachments of machine guns which will be placed for preference on those positions which it is most necessary to prevent the enemy from capturing.

On account of the weakness of their advanced guards, the Germans commit themselves to a meagre deployment at the outset of the engagement. As they also dislike the idea of employing batteries and battalions of the main body one after another as they come up, they aim at delaying the fight. The fight, however, must inevitably continue for the possession of the contested positions in front, and this will allow the commander time to decide whether he is able to deploy before the enemy or not. The question is one of importance, for the answer determines the next step.

If it is in the affirmative, it will be advisable to attack as soon as possible, in order to take advantage of the situation, to impose one's will on the adversary and hinder the methodical deployment of his troops.

If the answer is negative, "it is then necessary to act with caution. In order not to be surrounded or to have to fight all the time against superior numbers, the commander must try and avoid a serious engagement until he has succeeded in deploying sufficient force. It may even be advisable to withdraw the advanced guard in order to save it from heavy losses, and to shorten the time of deployment and extension of the main body."[1]

In all cases contact will be made gradually. Though this may not mean a definite breaking off of the fight, it can be taken as certain evidence that the force does not consider itself strong enough to begin the engagement with the energy and violence which characterise German methods.

---

[1] Infantry Training Regulations, Art. 360.

The artillery enjoys the principal *rôle* in the opening stage, for only its fire can protect the troops and gain time. The commander himself chooses its positions, fixes the number of batteries which are to engage the enemy, and gives the order for the opening of fire. These are new instructions and show how this arm has increased in importance in German estimation since the adoption of the quick-firing gun.

To sum up: the tendencies of the Germans in opening the engagement are, to strike quickly and to strike strongly. One idea opposes the other and only the artillery can effect a partial reconciliation between them. But the second tendency is the most marked, and so great favour does it find, that it has even surmounted their well-known objection to breaking off a fight.

2. *The Attack of a Defensive Position.*[1]

"The enemy who determines to act on the defensive, loses at that moment his liberty of action.

"The attacker then has the time he wants to undertake the necessary reconnaissances before carrying out a carefully thought-out plan of attack."

Not to hurry is the best basis of all the German movements. Reconnaissances should be complete and pushed as far to the front towards the enemy as possible; it should not be confined to the cavalry only, or to observation with field glasses. It should be completed by infantry mounted officers, by field artillery officers, and by the officers of the heavy artillery, who should work along the whole front and also on the flanks of the enemy's position.

As soon as the commander has cleared up the situation and gained a knowledge of the ground, he is in a position to judge what his chances of success are, if he makes an immediate attack. If it appears impracticable, he will profit by the daylight to reconnoitre, to mark the routes to be followed, and to select positions for the batteries. He will advance his troops under cover of darkness and will open fire at dawn the following morning. On the other hand, should he consider it possible to assume the offensive at once, the commander lays down in general lines the plan of attack; he indicates the positions which the artillery are to occupy and moves the infantry up to the *position of readiness*. This should be sheltered from view and fire, and should be at least 2 miles from the enemy.

The advance towards the position of readiness is made with weak advanced and flank guards, while officers commanding reconnoitre the lines of advance on horseback. As soon as the nearest portion of the enemy's line of defence can be ascertained, the line for deployment is divided amongst the different bodies of troops, and the reserve is fixed. In order to ensure co-operation, it may be advisable to regulate their advance by stages, especially in country where the range of vision is limited. By this means parts of the force which are favoured by the ground are prevented from reaching the dangerous zone prematurely, while others have been checked by forced detours or other delays. The mass of the artillery, with the exception of that portion which is at the disposal of the commander, is held ready to open fire: if possible, simultaneously and unexpectedly. They choose by preference as their objective those of the enemy's batteries which open fire on the infantry advance. The field batteries assisted by the heavy artillery facilitate the advance of the other arms, and enable the situation to be cleared up.

---

[1] Artillery Training Regulations, Art. 483-487; Infantry Training Regulations, Art. 362-372; Machine Gun Training Regulations, Art. 243.

As a rule machine guns do not take part in the opening stage of the engagement: they are kept in rear and form a mobile reserve in the hands of the commander.

"As soon as the troops have arrived in the position of readiness the commander gives the order for attack. If he has not already done so, he allots areas to the larger units in which to extend, and points out the portion of the position to be attacked by them (allotment of sections of attack). A given unit may also be designated, with whose movements the other units are generally to conform, without, however, being thereby hampered in their effort to advance." In short, with an adversary on the defensive, the Germans profit by the time gained to proceed methodically and without unnecessary haste to the reconnaissance of the position, the deployment, and the advance to the position of readiness. If necessary they wait till night before advancing. Their chief and incessant care is to avoid a partial check and not to open the fight before their troops are all brought up. They utilise every means to open unexpectedly along the whole of the enemy's front a combined artillery and infantry fire, and a fire which at the same time is as strong as possible. They strive also by careful dispositions to annul the advantage which the defender has by having all his troops in hand. Whether in the encounter-combat or in the attack of a position, the Germans sacrifice everything to the principle of uniting their forces: thus they follow the plan of co-operation, in danger as well as in commercial and industrial undertakings. They strive at all costs to avoid unsuccessful enterprises which are so serious under modern fire conditions and so disastrous to the *moral* of young troops. On the other hand, instead of energetically engaging with their advanced guards, which they do without altogether in front of an enemy on the defensive, they employ precarious methods of obtaining information. Consequently they run the risk of being insufficiently informed as to the enemy in these days of smokeless powder and the universal employment of the ground as a means of concealment. Further, they are in danger of seeing their conclusions falsified. For instance, is time a factor of advantage wholly to the attacker? In the case of weak detachments the answer is, No; because the latter can fall back rapidly. It may be so in the case of armies, for with larger bodies of troops the transmission of orders is a lengthy affair, and it requires time to break them up when they are assembled and to get them on the march in various columns.

The Frontal Attack.

We find in the new Infantry Training Regulations: "The combination of a frontal and enveloping attack gives the greatest promise of success. In order to carry out the enveloping movement, it is essential to hold the enemy in front. The best way to do this is to attack with vigour" (Art. 392). But, unless decided superiority of numbers can be relied on, the simultaneous attack of the front and a flank appears most disadvantageous, whether from a strategical or from a tactical point of view,[1] because it demands an almost uniform division of troops which, if it does not lead to a reverse, will not permit victory to be as decisive as it might be. "In the case of two opposing concentrations which are almost identical, it is necessary first of all to choose a direction of attack which aims for the enemy's flank and at the same time does not uncover one's own communications. It is also necessary to avoid engaging that part of one's line which is opposite the enemy's front, for here one will be at a disadvantage from a tactical point of view . . . this portion of the line will form, as it were, a refused flank."[2] In addition to the general motives which compel an economy of force against the enemy's front, there are other reasons for which the German "doctrine" is responsible. They are due to the fact that the Germans employ, as we have seen, no strategic advanced guard, and come to a decision early: they are, therefore, bound to provide against the surprises, which are always possible in an insufficiently clear situation, by making their enveloping attack particularly strong.

The troops charged with the frontal attack will feel the effects of the extreme parsimony with which their numbers have been allotted. We find it referred to in Article 392 already quoted: " if the available forces do not suffice for a determined attack, or if for other reasons a frontal attack is out of the question, a skilful commander can, by fighting a containing action, or even by threatening the enemy, make an effective enveloping movement possible."

The methods by which an enemy may be "threatened" are, unfortunately, not given: they should be of a circumspect nature, to judge by the containing action, the principles of which are given in Articles 418, 419, and 420.

---

[1] "The Conditions of Modern War." Bernhardi. Lecture at the Military Society of Berlin, 8th February, 1898.

[2] *Ibid.*

"A strong force of artillery will be employed at long ranges. By this means rapid decisive results will be best avoided"; also the infantry will be economised and their *moral* unimpaired if the contest be unequal.

"Infantry comes into action at long ranges, and is widely extended, whilst the rear lines are kept back."

"A strengthening of the front lines and the bringing forward of the troops in rear will only take place if the nature of the fight changes either by becoming a defensive action (the enemy attacking) or by the commander deciding to attack" (the enveloping movement beginning to make its effects felt). "False demonstrations should be made for the purpose of deceiving the enemy as to the real intention. Feint attacks may also be made."

In the holding attack the infantry will have fulfilled its mission when once it has got to within 1,000 yards. It will halt there and entrench itself; it will pay particular attention to the organisation of its strong defensive points so that they may be held, should the eventuality arise, against the whole strength of the enemy. For victory depends above all on the capacity of the holding attack for a protracted resistance.

Their tactical inferiority will cease as soon as the enveloping movement begins to make itself felt. Supported by their artillery they will then attack with the utmost energy, and will (equally with the turning force) aim at the overthrow of the enemy. In short, the frontal engagement will almost always be *at the beginning,* purely defensive.

By their procedure the Germans are undoubtedly in a position to protect their enveloping movement; they can also rapidly seize positions held by the enemy if the latter evacuate them. But they immobilise the enemy's first line only and have no effect on his reserves. Instead of holding the enemy at the beginning of the action, they immobilise themselves, and a mere screen will suffice to deceive them.

In France, in accordance with the Napoleonic tradition, the frontal engagement tends to be, at the outset, more active and vigorous, with a view to enabling the commander to "see." Carried out by strong forces, it continues the active, offensive reconnaissance, begun by the advanced guard, "holds" the enemy, wears him out, and makes every effort to *find,* or to *make,* the weak point in his dispositions, upon which the decisive attack will be launched.

The General Progress of the Attack.

The following lines describe the development of the offensive combat, noticing the peculiarities which the German method of carrying it out presents. They apply also to any attack and not only to the decisive attack, for beyond the Rhine there are no special tactics for the blow which decides the combat. Chapter I., which deals with the preparation of the battle, points to this conclusion.[1] *There is only one problem in the offensive and there is only one solution to it* : *co-operation of the different arms* : and from these arms the heavy artillery must not be omitted.

As the infantry of the attack are unable to make a serious effort, before the artillery have established a certain superiority, the latter arm has the leading *rôle* at this stage, and it is by its action that the Germans open the fight with the intention of destroying, if possible, the hostile batteries. While the contending infantry forces are at a considerable distance apart, the first duty of the artillery is to establish superiority of fire over that of the enemy. *To secure this every available gun will be brought to bear* (Art. 468, Artillery Training Regulations). It will not seek for success by economising its forces or by the ingenious artifice of counter attacks.

Should the ground admit, covered positions will be sought for the artillery; and it will be trenched notwithstanding its powerful shields. The German artillery is no longer deployed in long lines, as in the past, but in groups to secure concentric fire. As soon as possible the different portions of the artillery, from the battery to the brigade, are connected by a rapidly established telephone system.[2]

The first problem is to compel the enemy to accept the duel. To this end the infantry, supported by a liberal number of batteries, attack those positions the loss of which will sensibly affect the enemy. The attack is made in thin lines offering a bad target, while the remaining batteries are in a position of observation or of readiness. The enemy will thus be forced, as a result of the combined action of the two arms, either to abandon his advanced posts, or to intervene with his own guns.[3]

Begun in this way, the duel spreads rapidly and increases in violence. The field guns are supported by the field howitzer batteries and afterwards by the heavy quick-firing howitzers. These last are placed in the second line, if there is no room for them in the first, and fire heavy high-explosive shell from positions which are completely defiladed. This enormous mass of 160 pieces per army corps, worked through the telephone by a single artillery commander, strives for a decisive effect: by superiority in numbers; carefully arranged concentration of fire; by opening fire unexpectedly, and continuing with violent

---

[1] The German Regulations can be searched in vain for paragraphs dealing with the decisive attack, only the assault is dealt with by them.

[2] The employment of the telephone is the result of the war in Manchuria. The wires covered by an insulating material are merely laid on the ground.

[3] "Zur Frage der Schnell feuer—Feldgeschütze und Ihrer Taktischen Verwendung." General Von Hoffbauer, formerly Inspector-General of Artillery.

rafales; and, finally, by the concentration of frontal and cross fire. The batteries rarely change their position; the trajectories, and not the guns, are manœuvred. The infantry are thus relieved of the hostile batteries, which have their attention directed elsewhere, and push forward, making careful use of the ground, to as close a range as possible, about 1,000 yards in an open country.[1] Here they lie down and endeavour to obtain superiority of fire prior to a further advance. The essential principles of infantry fire are the same as those of the artillery, viz.: power and concentration. To obtain the former, the immediate deployment of dense firing lines is necessary; to obtain the latter, there is a tendency to employ enveloping tactics in the fight as well as in the battle. "Nowadays, with small-bore magazine rifles, and Q.F. guns, every tactical consideration must aim at obtaining supremacy of fire. Fight tactics have become, above all things, fire tactics, which mean the art of directing a superior volume of fire in the most suitable direction. It is upon this essential consideration that the advance, the deployment, and subsequent movements in action are all based" (Major Kuhl). To crush the enemy's front by a hail of bullets, to turn his shelter trenches, to make the utmost use of long-range rifles to enfilade and demoralise his lines, these are the objects constantly kept in view by the German infantry.

As the distance between the contending infantry decreases, the more important it becomes to bring a heavy artillery fire on the enemy's infantry (Art. 432, Artillery Training Regulations). To act opportunely and with effect, batteries will occupy a "semi-covered position" (*i.e.*, positions covered from view, but so near the crest that the guns may be laid for line by a layer standing at it or upon it), or the guns occupy the crest without any attempt at concealment. Guns are run up by drag ropes if the ground is easy and the distance to be covered is small. If not they are advanced at the trot after limbering up the guns and wagons. Changes in position are made under cover of a portion of the field batteries, which remain where they are, and under cover of the high angle fire of the howitzer batteries. As soon as they arrive in their new positions batteries will protect their front and flanks by thick parapets.

Protected in this way, practically, from the effects of shrapnel and shell fire, the batteries can devote themselves to the direct support of their own infantry and are not compelled to reply to the enemy's artillery which may engage them. The light and heavy howitzers also aid the advance of the infantry by directing their fire against villages, woods, and, most important of all, the enemy's entrenchments. These they endeavour to destroy by accurate fire and to reach the troops occupying them with their high explosive shell, which, when bursting, send large splinters to the rear and on both sides.

---

[1] Since the adoption of the "S" bullet, ranges are classified as follows:—

Long, beyond 1,200 metres instead of 1,000 metres.
Medium, up to 1,200 metres instead of up to 1,000 metres.
Short, up to 800 metres instead of up to 600 metres.

The infantry in the meanwhile advance from position to position, striving at each to obtain fire superiority. "The attack," says the Regulations, "is a fire advance against the enemy," up to a distance which in peace manœuvres is taken to be about 170 yards. The advance is made in half-sections, groups (four files), or even by single men when the ground is much swept. Their rushes are covered by the fire of the remainder.

"Entrenching tools may be usefully employed in positions to which troops are temporarily confined in order to hold on to ground which has been gained. It must not, however, be forgotten that a gain of time is more valuable to the defender than to the attacker. Also the difficulty of getting a skirmishing line which has been well entrenched to quit the cover which it has laboriously constructed and resume the advance under hostile fire requires spade work to be circumspectly used in the attack." (Infantry Training Regulations, Art. 313.)

Powerfully supported by guns and howitzers the attack progresses slowly and only by strenuous efforts. It is accompanied by storms of bullets from the machine guns, and in the last phases by certain batteries whose duty is to strengthen the *moral* of the infantry by their presence rather than by their fire effect. The co-operation of the various arms is one of the principal tasks of the commander, who is kept in touch with the situation by means of his telephones.

In accordance with the tactics originated by Frederick the Great, rather than as a result of the war in Manchuria, the German heavy artillery early prepares the way for the assault by destroying anything which is likely to obstruct the infantry.[1] The fire preparation is at length complete, and the moment for the assault arrives.

The assault is only the "consecration of a victory already won by fire." The final overthrow of the enemy is completed with the bayonet.[2]

"The superiority of fire must be such that the attacker, having broken down the resistance of the defence, has, in the assault, only to gather ripe fruit. If the assault is carried out under other conditions, if it presumes to constitute itself the power of compulsion which forces the enemy to give way, it is more than probable, in view of the power of modern firearms, that it will fail, and that the attack will be crushed" (Dickhut).

---

[1] The introduction of heavy artillery in the field dates from long before the Russo-Japanese War. In 1759 Frederick the Great organised brigades of 10 heavy guns and attached them to the infantry. They were employed at Zorndorf, Torgau, Freiberg, etc.

[2] Infantry Training Regulations, Art. 324.

"Undoubtedly, in order to dislodge the defender, a hand-to-hand fight, with cold steel, will be necessary at the last; generally speaking fire alone will not suffice. But this last dash forward, with fixed bayonets, is not a second act in the fight, but merely serves to draw the cash for the bill presented to the enemy during the first part of the attack, where the victory was gained by fire. The same determination to win, which enables the assailant to push nearer and nearer, and to face the long and obstinate preparatory fighting, at last decides him to assault. But if the *moral* of the defender is still unbroken, he cannot be driven out of his position with cold steel, and indeed, no assault will take place" (Major Kuhl). The men will throw themselves down on the ground and instinctively continue the fire preparation which they recognise to be still incomplete.

CHAPTER III.

NOTES ON THE DEFENSIVE BATTLE.

The Germans are by no means in favour of the defensive battle, although its (theoretic) superiority was extolled by Clausewitz and by Moltke. They rightly consider that the advantages accruing from the choice of ground, knowledge of the locality, the preliminary assembly of troops, which makes it possible to offer opposition, one way or another, for a certain time, are more than counteracted by moral considerations which (owing to permanent psychological conditions, entirely apart from the improvements introduced in weapons and armament) result in the subordination of the defender to the assailant. They also consider that the larger the force the more disadvantageous does the defensive type of operations become. Should an army be given a defensive mission—and there are such cases in war—it would best achieve its purpose by resolute offensive action. This tendency is clearly shown in the great German manœuvres.

"To push forward," writes Major Balck of the Great General Staff, "stirs up men's hearts and galvanises their resolution. The conviction of superior strength, *whether it be well founded or not,* never fails to act on the assailant to the detriment of his adversary." "The defender who wishes to gain a decisive victory, must use the methods of the attack as well as those of the defence" (Infantry Training Regulations, Art. 398). With the Germans, therefore, as with the French, the principle laid down is to wear out the adversary by fire on a carefully prepared front, and then to counter-attack.

As the chance of success increases with the strength of the general reserve, the forces to be disposed along the front must be sparingly allotted. This is managed by choosing a position with an extensive field of fire and at least one strong flank; by judiciously placed works and by a skilful division of the troops (Infantry Training Regulations, Art. 409).

The Germans place their General Reserve at the opening of the engagement in rear of the unsecured flank, with the preconceived idea of an enveloping movement, or, if both flanks are *en l'air,* "on that side from which, according to the probable direction of the enemy's attack and the nature of the country, it can best advance to the counter-attack." On the other flank they place a reserve sufficiently strong to repulse a hostile flank attack. As in the offensive, the manœuvre is executed on exterior lines. Accordingly the general reserve is placed in rear and outside the flank; the interval varies according to the effectives employed and may be as much as a short day's march if the reserve is of the strength of an Army Corps. "A reserve placed immediately behind a wing can only form a defensive angle with it against an enveloping attack. The fire of the defender will thus be divergent, that is to say, little efficacious" (General Schlichting).

The cavalry, supported by the horse artillery and machine guns, is pushed out to meet the enemy, to reconnoitre and check him, and to give the defender information in time to make his dispositions. For this purpose "it should be sent out as far as the next stream or river if possible. It can then count the enemy at the bridges, and report his strength and the direction of his march" (Von Moltke). Its mission also will be to draw off the enemy and, by means of its horse artillery and without being seriously engaged, to make him deploy in a wrong direction. "The great mobility of the two arms permits them to break off an engagement easily and to renew the same procedure a little later on" (Rohne).

We have thus roughly sketched the defensive battle on its essential lines, and can now deal with the division of the troops along the front and the measures taken to protect it.

The methods about to be described apply equally to a force which fights a defensive action in an entrenched position to gain time—such a thing as a retreat is inadmissible in Germany —or to units whose mission is to protect the enveloping movement in a battle and are attacked by superior forces.

"Only one defensive position will be selected and this will be strengthened by all possible means." (Infantry Training Regulations, Art. 407.) There will, therefore, generally be no advanced line of infantry or artillery and no *advanced posts,* but only *detached posts* within effective rifle fire of the line of defence.

Griepenkerl explains and develops Article 407 as follows:—

"An advanced position should not be occupied if it is out of musketry range, for the defenders of this outpost run the risk of being cut up while retreating. The enemy follows close on their heels and will get up to our main position without suffering loss; or, if we wish to support our advanced position by reinforcements, we shall be drawn into an engagement on ground other than that of the main position, which we have chosen as being the most advantageous for the fight.

"Farms, clumps of trees, hollow roads, railway embankments, etc., which are within effective rifle range and will aid the attack if unoccupied, should be considered as an integral part of the position itself and be strongly held"; more especially when they are placed at the foot of a slope and watch a dead angle.

These detached posts are strengthened not by men but by ammunition. They will be provided with machine guns, which are easily concealed, take up little space, and have a large volume of fire. Their employment will be especially advantageous if their retreat is favoured by the ground (Machine Gun Training Regulations, Article 246).

The line of defence will be divided into sections. "The extent of a section depends on the nature of the ground, which cannot be advantageous everywhere, especially in a long extent of front. A suitable disposition of the force must supplement it. With a good field of fire a section can be proportionately long owing to the rapidity of modern fire. Here there should be fewer rifles, but a larger supply of ammunition. If the field of fire is limited and the enemy can approach under cover to within short range, the section should be small and strongly occupied (Infantry Training Regulations, Articles 397, 400, and 402).

The artillery is divided into groups to facilitate enfilade and cross fire. Fire of this description can quickest overpower guns provided with shields, but which have not had time to entrench themselves.

Batteries look for covered positions and are placed in them at wide intervals, to lessen their vulnerability, to avoid prematurely disclosing their numbers, and above all to enable a change of position to be made. Changes of position become necessary when artillery in a threatened quarter has to be reinforced. Spare time is employed in improving approaches, taking ranges and clearing the field of fire. It is mentioned that small detachments of artillery may be placed *en caponnière,* to watch dead angles in front of a position. Until the enemy is signalled the batteries will remain assembled. The whole of the artillery will be seen, therefore, in lines of masses in position of readiness. The preparation for fire is pushed on as the situation clears itself.

In a similar way the infantry do not occupy their positions, which as a rule are from 660 to 880 yards in front of the artillery.

Patrols are sent out in front to prevent the enemy reconnoitring the position. Any available time is employed in constructing defensive works, a description of which is in the Regulations for Field Fortifications of 8th June, 1906.

These works may be of considerable size if a battle on a large scale is expected. Often many hours elapse before the assailants arrive, as the war in Manchuria proves. In 1870 Bazaine had a whole day before him to organise his left wing at St. Privat, and it is known that Von Werder had decided on 11th January, three days in advance, to fight on the Lisaine.

The Germans dig deep sunk lines of trenches for preference. These are constructed for whole battalions and are provided with traverses, ammunition recesses, and covered-in shelters. Villages, farms and woods are placed in a state of defence, and wire entanglements are constructed.

Batteries, whether of guns or howitzers, provide themselves with cover protecting their front and flanks. They construct ammunition depôts, and observing posts for all officers (from brigade commanders to lieutenants) who direct the fire or command.

If the battle is prolonged, all works—the most difficult of which are constructed by the pioneers—are methodically strengthened.

But "if circumstances turn out differently to what was expected, commanders must not be influenced in their procedure by any entrenchments which may already have been constructed. On the other hand the consideration that works may never be utilised must not lead to their not being undertaken" (Infantry Training Regulations, Art. 311).

These preparations are completed finally by the establishment of a telephone system for the commander, for the troops themselves, and finally between the troops and the ammunition and supply columns.

When the cavalry have obtained information which shows sufficiently the direction of the enemy's march, the troops rapidly occupy their fighting positions. The field artillery supported by the heavy artillery open fire, taking as their first objective the enemy's batteries. The battle begins; . . . before long there will no attacker or defender.

* * * * * *

The attacker, after demonstrations on the part of the defender's cavalry, will come at once under the fire of one single main position, strongly held and substantially fortified. The preliminary phases of the engagement will be characterised by the vigorous and unforeseen deployment of troops which, till then, will have been carefully kept out of sight. Ability will be shown less in making feints, than in the sudden development of very strong forces in action.

To sum up, the tendencies are the same, in both offensive and defensive operations. The Germans rely upon their cavalry alone for information and security; they manœuvre according to a preconceived idea, and—convinced that the great point at the present time is to obtain superiority of fire—they consider that envelopment offers the simplest and most reliable method of bringing into line more rifles and guns than the adversary.

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from July JOURNAL, p. 919.

CHAPTER VI.

AFTER MAKAROFF'S DEATH—THE VICEROY'S FLAG IN "SEBASTOPOL"—THE THIRD JAPANESE ATTEMPT AT BLOCKING—THE FLIGHT OF ADMIRAL ALEXEIEFF FROM PORT ARTHUR—THE "GREAT EDICT OF RENUNCIATION."

THERE is an old tradition, dating from the early days of Christendom, according to which a perfervid follower of the faith took an axe and demolished the statue of Serapis, cutting it into small pieces. But the heavens did not launch forth thunderbolts, and the earth did not open up, to punish the miscreant, and the heathens were much frightened. Yes, they were frightened, and therefore many had themselves baptized. They did not do this because they no longer believed in their old gods—for one does not lose one's old faith quite so quickly—but because they felt that their old gods had deserted them.

I mention this tale, as it represents very well the depressed frame of mind of the squadron after Makaroff's death. If God permitted something so sad, it meant that He had deserted us. Against this frame of mind energetic measures became necessary. Simple natures, containing little that is complex, such as the majority of our sailors, are as susceptible to a few cheering words as they are to despair. This lightened our task. I don't know what went on in the other ships, but with us on board the *Diana* the officers had never before occupied themselves so much with the men as now. Everywhere in the batteries and on the lower deck, diagrams and details of the ships composing the Baltic and Black Sea Fleets were to be seen. We had prepared these ourselves, giving the displacement, armament and armour, etc., of the ships, and had them reproduced on board. Around these "Proclamations," as they were jokingly called, the men soon crowded. They discussed them with much eagerness, reckoned up in their heads and on their fingers the numbers of the various classes, and formed in their minds the squadron which might be sent out to the Far East. We often heard very sensible remarks. The officers joined the men here and there, and gave them any necessary explanations.

There was one question, however, which was being discussed with still more eagerness than the reinforcements we might receive. That question was: Who was to replace the late Admiral Makaroff? I often went from one group to the other, listened, perhaps joined in occasionally, and explained this or that to the men. Every time I was astonished to see how well the men knew their principal leaders. They seemed to be familiar with all the personal qualities of our admirals. On the lower deck the same names were put forward as candidates for the position of Commander-in-Chief as in the officers' messes. They were admirals for whom I also should have voted unhesitatingly. In the first place came the names: "Dubassoff," "Tchooknin," "Rojestvensky." When the men were debating as to which had the greatest chances, one could often see from their remarks how rightly they judged all the circumstances.

"Sinovi[1] won't be sent out; he is too junior. That might offend the older ones. Dubassoff—that would be fine." "But isn't he too old?"—"He old? He's as hard as nails and keen at his work."—"They say Grigori[2] has the best chances."—"No, it will be Dubassoff. His age don't count."—"I think so too. He's the best man. All the same, it would be better if he were younger."—"Why, of course, Dubassoff."—"No, Sinovi."—"No, Grigori."

Sometimes these debates became very heated. The supporters of one or the other of the admirals were often near to deciding the argument with their fists. Then the boatswain or one of his mates interfered very energetically. "What are you shouting for? Do you think they can hear you at St. Petersburg?" This would re-establish peace.

I always listened to these debates with great interest. The war had now lasted two months. The first had passed in a kind of lethargy. The real war only began during the second. The second month, under the command of a popular admiral, had shaken up our people. He had aroused their interests and their co-operation in a splendid way. It was hardly to be believed that these were the same men, who throughout the first month had brooded through their days and had looked upon every effort to arouse them as a piece of persecution on the part of their superiors. "To listen to these men," the torpedo lieutenant once said to me, "one would think that since Makaroff's death the entire fleet rests on the three pillars—Dubassoff, Tchooknin, Rojestvensky."

---

[1] Sinovi (Zenobius) Petrovitch (son of Peter) Rojestvensky. Pronounce: "Rah—*jest—nsky"*; the accent on "jest," the "o" in the first syllable becomes a broad "ah," and the "ve" is practically swallowed.

[2] Grigori (Gregory) Paulovitch (son of Paul) Tchooknin.

"Well, and what do you say?"

"They are right."

On the morning of 15th April the Viceroy arrived in Port Arthur. His flag was hoisted on board the *Sebastopol*. She lay in the East Basin, alongside the north mole, opposite the Captain of the Port's house. We hardly noticed this incident.

The younger ones could not bridle their tongues, and said that it was all make-believe. "He won't go into action with us."

The first crushing impression of the catastrophe which had robbed us of our Admiral with nearly the whole of his staff gradually faded away. And now the wildest rumours about the appointment of a successor began to circulate in the squadron. Whence their origin, no one could say. Probably they arose in our own impatient imagination. Again and again we heard the three names—Dubassoff, Tchooknin, Rojestvensky.

At daybreak on 15th April the Japanese hove in sight. Of course, we did not move out. Towards 9 a.m. a bombardment commenced. Liao-ti-shan signal station reported that only the *Kasuga* and *Nishin* were firing. The Japanese had only recently bought these two cruisers and added them to their fleet. This was their first appearance off Port Arthur. Probably they merely wanted to try their guns. The battleships were cruising about to the southward of them, without taking any part in the bombardment. Somewhat nearer, and more to the eastward, almost facing the entrance to Port Arthur were the "greyhounds" and two armoured cruisers. On our side the fire was replied to by the *Peresviet* and *Poltava*. This time the Japanese fired carelessly. Most of their shots went short and fell into the southern part of the West Basin. Our losses were only two men wounded on Tiger's Tail Peninsula. About 12.30 the Japanese steamed away at high speed. Liao-ti-shan reported that they did so as one of their cruisers (*Kasuga* or *Nishin*) had struck a mine. Upon this all ships had fired aimlessly into the water. Probably they suspected an attack by submarines, just as we did on 13th April. Two days later, Chinese spies reported that the third-class cruiser *Miyaka* had foundered in Kerr Bay (east of Talien-wan), on our minefields.

These two items of news were not confirmed by the official Japanese reports from the seat of war. Our enemies always managed to keep their losses secret[1]; in direct contrast with us, who always quite candidly kept the world informed of the state of repairs on our damaged ships. I am therefore inclined to believe the above-mentioned reports, and that all the more as the Japanese afterwards admitted the foundering of the *Miyaka*. They only put the date one month later. They similarly admitted the damage to the *Kasuga*. They explained this by saying that she had rammed the *Yoshino* in a fog—the latter ship having been sunk. On our side the destroyer *Silni* maintained that she had sunk the *Yoshino*. On 13th April the *Silni* formed a sub-division with the *Strashni*. In themselves these disputes are without any importance. It is, after all, immaterial why the *Yoshino* sank, how the *Kasuga* was damaged, or on what precise day the *Miyaka* went down. I only mention this to show how successful the Japanese were in preserving their war secrets, and how unsuccessful we were. With us the word "secret" is mere office jargon; with the Japanese it is a matter of conscience—a sacred duty towards their country. Of course, with us the cult of office secrecy was in full swing. Every order issued by superior authority, which differed only in a minute point from the usual form, and only possessed momentary importance, was "secret." The terms "secret," "most secret," "confidential," etc., were conspicuous on all reports, but especially on all orders. The result was that all these awful words lost their meaning completely. They might have been replaced by the words "important" or "interesting." Moreover, the number of secret documents was such that it was physically impossible for anyone to write them personally, or even to have them written by some confidential person. It therefore became necessary to employ clerks, or even copyists, who were then always ready to communicate interesting bits of news to their friends—of course, in strict confidence. Now, it occasionally happened that real secrets found their way into the pile of office secrets. How could one distinguish them? What was "secret" was always known to everyone except the one person who ought to have known it, and on whose silence one could have relied.

---

[1] The Battleship *Yashima* struck a mine on 15th May, and sank the following day on her passage to Japan. It was not till October that rumours reached Europe, and even Japan, of this incident. It became only definitely known after Tsu-Shima.

It once happened that one of the captains or commanders (I mean a particular person) asked a friend on the Admiral's staff: "Is it known when we sail?"

"I have no idea."

On board the ship the servant of this same officer went to his master on the same day and said that he ought to go to the washerwoman.

"Why?"

"I want to get your washing, sir, as we are going to sea."

"Going to sea? You are talking rot."

"No, sir, the Admiral's valet told me this morning that everything is to be on board by to-morrow evening."

Once upon a time—it was some years before the war—an admiral commanding a squadron was in great tribulation. He wanted to issue an order to his captains, which he was most anxious to keep secret. "It is really maddening," he said; "everything gets known here, and to those especially who ought *not* to know." "Don't mark it 'secret,'" advised one of those present, "then not a soul will look at it." This is exactly what happened. No one took any interest in this order.

I apologise for this digression, and return to my narrative.

About the middle of April we received the official intimation that Vice-Admiral Skridloff had been appointed Commander-in-Chief of the Pacific Squadron. This appointment was received afloat without enthusiasm; but on the whole it was considered satisfactory. To judge by the remarks one heard, there was a general agreement to suspend judgment. The Admiral was not one of the candidates who had been considered; but—we shall see.

If Makaroff had not been delayed at Mukden by his consultation with the Viceroy, he would have been here on the fifteenth day from the date of his appointment, as calculated by some of us. Consequently, Skridloff might be expected between 30th April and 3rd May. This calculation was not confirmed. Solemn receptions, processions, special church services of intercession and for other purposes, dedications of holy images and banners—all these falsified our calculations. Faces at Port Arthur became more and more gloomy.

The Japanese had apparently disappeared from the face of the earth. Nearly three weeks passed without a sign of them. Meanwhile the squadron slumbered on in the basins of the inner harbour. Even the scheme of guard ships in the outer anchorage was abolished.

In fact, everything established by Makaroff disappeared. Precisely the same glorious state of affairs as had obtained before the war reappeared. The flag at the *Sebastopol's* main topmast head seemed to possess the peculiar power of paralysing all initiative, and of stifling every word except the well-beloved "Very good, sir."

The "most obedient servants" once more raised their heads and ruled the roost.

"Here we have the results of fool-hardiness," they said. (Not long ago, together with all the rest, they had cheered the Commander-in-Chief's flag in the *Novik* with enthusiasm.) "One must carefully distinguish between bravery and foolhardiness. Very often it is true manliness to avoid danger. One must not hunt up danger only for the sake of cheap popularity. Our adventurous enterprises must now cease. In all Service concerns there must, above all, be deliberation and broad views. The Viceroy may yet have to justify himself before Russia for having been so weak as to hand over the command to the so-called 'Little Grandfather.' *He* would never have risked such a thing. You see what has been the upshot of it all. Now he will have to put everything to rights. All our hopes are centred on him. God grant that his work may succeed! Kuropatkin well knew what he said when he proposed the toast: 'The good genius of this country—Eugene Alexeieff.'"

This sort of thing they said aloud. They wanted to be heard, and, if possible, to be reported.

It was an ugly picture.

The maxim, "Be careful and risk nothing," once more had the upper hand. Under the hypnotic effect which the flag in the *Sebastopol* produced, a new maxim was added: "Never do anything without orders or without previously asking permission."

Makaroff had said: "I rely upon every one of you, each in his own place, devoting his whole strength towards increasing our preparedness for war." This was so simple that everyone understood it. This principle had produced great results; it had left to every captain, to every officer down to the youngest and the lowest, the most complete liberty. Personal initiative occupied the first place, the whole Service was carried out on grand lines. We had got so far, that of our own accord we set ourselves tasks which were regularly completed in order. Now everything was upset.

Exercising at general quarters, combined with sub-calibre target practice, had become a regular habit in the *Diana*. When we were about to resume these again as formerly, the new *régime* showed itself clearly.

There was an order in existence that before every general exercise or large evolution the Admiral's permission had to be obtained. This order was always adhered to, but with Makaroff this asking permission had merely the character of a communication of one's intentions.

When a ship hoisted the daily signal: "Permission to carry out such and such an exercise," flag D (the affirmative) was "mastheaded" at once on board the *Petropavlovsk,* where it was always kept ready for instant hoisting.

Now things worked differently.

On the *Diana* making her signal, the *Sebastopol* hoisted the affirmative "at the dip," and kept it there.[1] Finally she hoisted the negative (meaning no). She then asked by semaphore: "Was your last signal made correctly? Did you really mean to carry out target practice?" When we replied in the affirmative, the signal was made for the captain to repair on board the flagship.

When he came back he was not very communicative. He only said that in future we were to comply carefully with the routine of work as drawn up and about to be issued by the chief of the staff. This sub-calibre practice had been noted as quite worthy of consideration, but in future this practice was to be regulated so as to enable all ships to participate in it equally, etc., etc.

We had to be prepared for a speedy reappearance of the Japanese off Port Arthur. Consequently, the outer anchorage was being swept by steam launches and pinnaces for mines which the enemy might have placed there.

In return, we laid out our mines at the places we did not mean to pass over ourselves. All this was done but lazily, without any sign of self-confidence or energy.

---

[1] In the Russian Navy the affirmative flag, or answering pennant, close up means: "I see your signal and understand it." At half-mast (at the dip): "I cannot make out your signal clearly, and cannot understand it. Is your signal hoisted correctly?"

The reader will ask: Were there no men of energy at Port Arthur who took matters in hand themselves and carried out the service in the way it ought to be carried out? Of course there were such men—as was well shown later on—but now they were all under the hypnotic influence I have mentioned. Whoever suggested something new was held to condemn the old ideas. But these old ideas had been sanctified by the Viceroy, who vigorously resented any doubt of his infallibility. He was no Makaroff, who asked every one for his candid opinion. Makaroff considered even violent criticism better than enforced silence, which regularly leads to inactive subordination or to passive resistance—there is not much difference between them. Makaroff could be very angry and scold fiercely, but he caught up eagerly any idea, no matter where it had originated, if there was any chance of its being successful. Times were indeed changed now that all was based on the myth of Minerva springing fully armed from the brains of Jupiter. What can the voice of the ordinary mortal do against Olympic thunder? There were some men amongst us who wanted to play the part of Prometheus, and how did they fare? There were many who thought thus. Are they to be judged severely? Their thoughts were the outcome of sad experiences. How could an honest or sincere voice, be it civilian or military, have made itself heard in the province of the Satrap of the Far East? It would have seemed quite natural to be ordered to flog the yellow sea for allowing its banks to smell so badly at low water that the great Viceroy was no longer able to sit out on the balcony of his palace. No Themistocles could arise and say: "Strike, but hear me." Here we only had men at the helm whose creed was to keep silence and to agree to everything.

A sad event happened on 21st April. In the neighbourhood of Liao-ti-shan a line of mines was being laid out by some harbour craft. As this was being done, one of the mines went off, and Lieutenant Pell and nineteen men lost their lives. I had known Pell from the time of the China campaign. During the Seymour expedition he was wounded in both legs. He was carried along for some time on a stretcher without any medical attendance. More than once he was in danger of falling into the hands of the Boxers, who gave no quarter. Still Pell recovered. He again saw active service, and was fated to so sad a death, and that, too, owing to the imperfections of a weapon of which he was a specialist. (Pell was a torpedo lieutenant.)

About this time I was very unexpectedly made member of a commission to examine the Japanese who had been taken prisoners on 26th March on board the steamer *Hayen-Maru,* and the papers found on them. It was rather strange that the executive officer of a man-of-war should be put on such a commission. To the non-seamen amongst my readers I must explain that the captain of a ship is, so to speak, the king, who only appears personally at highly critical moments. The second in command, or executive officer, acts in the name of the captain, on his orders or with his approval. He is the Prime Minister, who bears the immediate responsibility for the internal organisation. One may say (leaving aside exceptional cases) that the captain is the pendulum which regulates the movement of the clock, the second in command the spring which produces the force required to work the mechanism. If the second in command is only a few hours out of the ship it has a bad effect on the life on board. This is inevitable; the second in command must practically be always on board. In the ward-room the fact of his going on shore is quite an event. One can often hear a remark such as: "That was before 'number one' went on shore the last time."

Personally, I had nothing to say against taking part in this commission's labours. To tell the truth, I was rather glad. It was, after all, quite tempting to be sometimes out of the ship on duty and to meet other people. It was rather the captain who took the matter to heart. "It would have been better if they had appointed me," was his view, and he went off at once to the Viceroy's naval office. There, however, he was told that it was known that I had some knowledge of the Japanese language and the Japanese and Chinese characters. That was why they had selected me. He had to be satisfied with this. At first I did not quite believe in these motives. It was certainly known to some in the squadron that once upon a time I had studied the Japanese language, as well as the Japanese-Chinese characters, for a year. At that time I had reached the point where I could freely read and translate Japanese newspapers. But that was six years ago. Since then, from want of practice, I had forgotten much. I nowise considered myself justified in playing the interpreter, especially in so important a case. But already at the first meeting I had, willy-nilly, to lay aside my modesty and to try and furbish up my knowledge as well as I could.

It turned out that in this whole enormous staff there was not one person who was a thorough master of the Japanese language and characters. We employed as interpreter a sub-lieutenant of the Naval Reserve, who had been called out, and who at other times was a student of Oriental languages at Vladivostok. It was hard to say which of us two knew least. Fortunately my colleague possessed a rare quality: he was free from professional conceit. We worked together in friendship and harmony, laughed heartily when we got hopelessly stuck, and then tried to get out again with our united forces.

How would such an examination have been carried out amongst the Japanese? On board every ship, in every regiment or battalion, even in every company, they had people who spoke and wrote Russian fluently. What a hail of cross-questioning in their own language would the members of our commission have been exposed to if they had been in the position of the Japanese whom they examined!

The commission met in the state reception rooms of the Casino, which were generally kept locked. On one occasion, when, after a meeting, I had to wait for my boat which was to take me back on board, and which was late, I went on board the *Sebastopol* (lying alongside) and looked up my old friend and shipmate B—— (since dead), her second in command.

As always happens at a meeting after a long separation, we embraced, and mutually began a whole string of questions. Our conversation was interrupted every moment by the "guard call." Every time B—— had to rush off and meet at the gangway some admiral or general, either coming on board or going away.

"What a lot of "big wigs" you seem to have coming on board here," I said, with astonishment.

B—— made a gesture of disgust. "Don't talk of it!" he burst out. "You imagine, perhaps, that I am the commander of this ship? The whole of my work is done by the first lieutenant. I only run backwards and forwards, escort to the gangway, receive at the gangway, receive, escort."

"What is the meaning of this?" I pointed at a crowd of workmen. Carpenters were putting up a number of cabins in the mess with wooden partitions along the bulkheads; they were hanging doors and fitting windows. Painters were pasting wall-papers on the bulkheads of these cabins. Other men were busy screwing in hooks, placing furniture, etc., etc.

"That is all for the Viceroy's staff. Up to now I don't even know how many there are and when this great immigration is to cease, notwithstanding all the trouble I give myself to find out."

"But when you go to sea—go into action? What then? On board our ship orders were given to remove all woodwork except what was absolutely indispensable. All furniture and ornamentations have been sent on shore, so as not to provide food for flames in any fire. Our bulkheads are made of steel, but the doors were made of wood, so the latter had to be replaced by canvas screens; and on board here you are actually building up cabins with inflammable material! What will this lead to?"

B—— became quite furious. "Are you mocking at us?" he flared up. "Where will this lead to? In these conditions we shall simply go to the devil."

I was bound to agree with him. The maxim: "Be careful and risk nothing" was again in force. Judgment had been passed on Makaroff's adventures. They would not be repeated. This was shown clearly in everything around us—in the Viceroy's orders, above all, in the attitude of the leading personages since Admiral Alexeieff had hoisted his flag in the *Sebastopol,* and generally in the talk of the "most obedient servants."

During the night of 30th April, Japanese destroyers appeared in the outer anchorage. They were certainly going to lay out mines. When they were lit up by our searchlights and fired on by our batteries, they beat a hasty retreat, but their task was probably accomplished.

On 3rd May, at 1 a.m., I was awakened by the sound of far-off guns.

Where can this be, and what can be the meaning of it, I thought, and strained my ears. Was it the right or the left flank which was firing? It would be unpleasant to leave one's warm bunk merely to satisfy one's curiosity, and to go up on the bridge in the wet and cold of a dark night. From our place in the West Basin we could under no circumstances take part in an action.

Suddenly the single guns changed into a continuous, rolling thunder. Even through my screened port I could see repeated flashes, sometimes light red, sometimes golden yellow. It was evident that everyone who could was firing. Sleep was now out of the question.

Little was to be seen from the *Diana's* bridge. The edges of Golden Hill, Lighthouse Hill, and Tiger's Tail Peninsula were like the side-slips of a stage. We were the "supers" waiting behind these for the moment when we were to step on the stage, and, like these, could only guess what was being enacted there.

The Japanese were trying for the third time, and with even more desperate pluck than before, to block the entrance to Port Arthur.

The enemy had doubtless heard from their spies that their previous attempts had miscarried, and similarly what measures we had taken against renewed attempts. They knew that they could no longer reach the entrance on a straight course, but would have to follow an artificially winding fairway. What did they do? Under the furious fire of our batteries and guard-ships they placed destroyers at the turning-points. These showed the "fire-ships" their path.

Eye-witnesses described that the pluck of these boats was simply fabulous. One of these destroyers was blown up by our mines, another was sunk by gun-fire, and probably many were damaged. But they accomplished their task.

The experiences of this war are still too recent and acquired at too great a cost to be made public.

Whey by and by archives are thrown open, then we shall hear all the details of this attack. For the present I must confine myself to the notes of my diary and the accounts of other eye-witnesses, not more reliable.

The "fire-ships" numbered twelve. Four of these sank, or could not face our fire and fled seawards. Eight held on.

The whole of these eight steamers sank at a distance from the entrance, but two got through all the turns in the fairway and reached the *Chailar*. Fortunately, they did not sink across the fairway; but that was neither their fault nor our merit—but mere chance. In any case, it must be admitted that Makaroff's system of defence against "fire-ships," as elaborated by him in detail and laid down in instructions, had been brilliantly vindicated once more. The coast batteries, guard and defence vessels, all worked splendidly.

The Viceroy was present at this affair on board the *Otvajny*. There was nothing for him to do but listen to the playing of the piece as set to orchestra by the gifted composer, our "Little Grandfather."

A certain class of men afterwards delighted in dilating on the manner in which Admiral Alexeieff had personally directed the repulse of the Japanese block-ships " . . . under the hail of projectiles from the machine guns of these steamers" (*Ruskaya Starina*, April, 1907, p. 71). They are the followers of the Admiral, who admire his talents, historians who attempt to embellish his reports, flowery though they already are. In the interest of truth, I must in the first place state that notwithstanding this hail of projectiles we sustained no losses whatever. If this hail really existed, it was assuredly directed against the nearest adversaries. These were the guard-ships at the booms, the guard-boats, and the batteries of Q.F. guns which had only recently been pushed forward as far as possible, and had been built close to the water's edge.

The *Otvajny* was lying abreast of the second line of defence, between Golden Hill and the entrance to the East Basin. She could not possibly have been exposed to any hail of projectiles. The Viceroy's precious life was never in danger. Outside the *Otvajny* lay the two outer obstructions, the breakwater of sunken vessels, the first line of defence—*Gilyak* and water batteries—and finally a solid boom with torpedo nets, which reached nearly to the bottom. This last obstruction really closed the actual mouth of the harbour.

Moreover, the *Otvajny* lay in the rear part of the entrance, not the outer part. It was hardly possible to observe the march of events from her, let alone to issue orders. That could perhaps at the most have been done from the *Gilyak;* but this vessel lay well forward. To go to her the Viceroy did not consider necessary.

Be this as it may, the entrance, thank God! remained free. The newly sunk "fire-ships" only strengthened the breakwater of submerged vessels which Makoroff had constructed. A further attempt at blocking was thus nearly hopeless.

On 24th February and on 27th March it had been calm, and the survivors of the crews on board the Japanese "blocking ships" had turned to account the general confusion (these forty or fifty men were indeed hardly worth troubling about) and had escaped to sea in small boats. There they were picked up by their cruisers and destroyers. We only picked up some corpses. We buried them with full military honours. (This action was thoroughly appreciated in Japan. Many Japanese realised then that we were, after all, not the Barbarians we had been described as.)

On 3rd May the conditions were quite different. A fresh south-easter was blowing, force 3 to 4. In the roads there was a choppy sea, and a swell outside. It was difficult enough to get out the small, mostly damaged boats and to man them. To pull up against wind and sea was simply impossible.

A portion of the Japanese succeeded in getting such of their boats as had remained intact into the water. They eventually had to beach them and surrender as prisoners. The remainder swam about on wreckage or kept themselves above water by clinging to the masts and funnels of the sunken vessels. These were crying out despairingly for help. I need not say that our steamboats hastened to save the drowning as soon as the action was over. A moment before they had been firing their torpedoes against the enemy; now, for the sake of this same enemy, they risked being dashed to pieces in the seas which were breaking over the sunken vessels.

I should not like to pass over in silence an interesting detail connected with this. The Japanese who were saved by our steamboats were evidently much sobered by their cold bath. On the other hand, those who had reached the shore threw themselves with shouts of "Banzai" half-naked, and quite unarmed as they were, on our men, who were running to their assistance. Naturally, our soldiers and bluejackets never thought of using their arms under such conditions. They threw away their pistols and took on the "mad Japanese" with their fists, laughing and joking. Some of these Japanese had to be secured with ropes; they were not to be subdued. Perhaps there was a good reason for this. When, prompted by curiosity, we went over the former "fire-ships" which had been sunk, we were astonished at the large number of half-empty brandy bottles we found on board. This discovery was all the more extraordinary as the Japanese are a most sober people. Their national beverage, *saké,* is not stronger than our ordinary beer, and is drunk out of tiny cups. This showed that not even Japanese nerves could face the truly hellish situation the "fire-ships" found themselves in when making for their goal. The Japanese were inebriated with patriotism and the joy of victory, but this had evidently to be supplemented with alcohol.

This discovery spread everywhere by unknown means with extraordinary rapidity. It helped considerably to raise the spirits of our crews. The majority of our men consider it to be as great a sin to drink spirits on the eve of battle as before going to Holy Communion. They often refuse to drink their Government spirit ration when they are having their dinners in sight of the enemy.

"That's not the way of doing things," said Petty Officer Tkatcheff, in his mess. "You should face God pure as a candle burning before a shrine. Think of your oath!"[1]

I confess we officers plucked up courage when we heard remarks such as these. We gained fresh hopes. Were we not bound to succeed if we all were like "candles before a shrine?"

At daybreak on 3rd May the Japanese squadron hove in sight. We prepared to be bombarded. The signal went up "to stand by to fight at anchor"—that, is, we were to reply in like manner to their high-angle fire. No bombardment, however, took place.

---

[1] All Russian soldiers and sailors are sworn in on entering the Service.

The first confused but ominous rumours of the battle of the Yalu now reached Port Arthur. Our losses were reported to have amounted to two thousand men and twenty guns. We could not believe this. Had the Japanese really landed there, and had we kept so bad a lookout? Our guns in their hands? How could this be possible? Should we have to pull down the column of victory (at St. Petersburg), cast from captured Turkish guns?

On 5th May the whole Japanese squadron was again in sight from Port Arthur all day.

At 11.30 a.m. the Commander-in-Chief's flag was struck on board the *Sebastopol,* and a rear-admiral's flag took its place. Admiral Vityeft took command of the squadron. The Viceroy went off to Mukden. For some days already a special train had been waiting at New Hill. However, we had got quite accustomed to the sight, and thought the train was only there for any emergency. The Viceroy left so suddenly that many of our leading personages only heard of his departure after he had gone. Of course, His Excellency was not escorted solemnly to the train. It was even said that some of the gentlemen on Alexeieff's staff, who happened to be absent that morning, had not caught the "special," and had to follow on later.

I cannot say that this obvious flight made any strong impression on the squadron. Some of us were even quite pleased. But all saw in this an alarming symptom; one avoided discussing it aloud. All conversations in the mess were quickly spread amongst the men by the servants. But we were living in times when we were bound to pay close attention to the spirits of our people. The more detailed news from the north, from Turentchen—the heroic attack of the 11th Rifle Regiment, the high percentage of losses—somewhat softened the effect of the first bad impressions. We were beaten, but had no need to be ashamed.

The historians I have already mentioned state: "On 5th May the Viceroy, in accordance with the Emperor's orders, handed over the command of the squadron to Rear-Admiral Vityeft and proceeded from Port Arthur to Mukden, accompanied by his staff." And again: "Events now followed one another in rapid succession. On 6th May it was already known that the Japanese had landed at Pitsevo, N.W. of the Elliot Islands, at the same spot where, in the war with China, they had landed some batteries of mortars." In consequence of this the Viceroy telegraphed to Vityeft, already on 6th May, whilst still on his journey, that is, at Van-fan-gou: "Destroyer attacks against the enemy's transports very advisable, and very important for the defence of the fortress. The enemy's transports are all now within the radius of action of our destroyers."[1]

---

[1] *Ruskaya Starina,* April-May, 1907.

How disastrous for Russia that this excellent idea of preventing a Japanese landing had only occurred to the Viceroy when he was at Van-fan-gou, where he was out of range of the Japanese guns, and no longer able personally to lead a risky undertaking! We at Port Arthur knew, of course, that "events were following one another in rapid succession"; yet not so rapidly but that the Japanese intention of landing at Pitsevo only reached Port Arthur after the Viceroy had departed thence, "in accordance with the Emperor's orders." We knew very well that this order of the Emperor's was merely an approval of his suggestion. (Telegraph secrets are on oath, but they sometimes leak out.) The Japanese had been preparing quite openly since 28th April to land at Pitsevo, utilising the Elliot and Blonde Islands as bases. They placed booms across the narrow passages and mines in the wider ones—all in the direction of Port Arthur. By 4th May they had advanced with these protective measures within seven miles of Pitsevo. It was quite clear where they were going to land. In view of this situation the Viceroy asked "most humbly and respectfully" what he was to do. Was he to remain in Port Arthur, which might be cut off any moment, or proceed to Mukden? This was the most favourable moment for preventing the free development of the Japanese operations. The Viceroy was, in the first place, the Admiral, and should have been at the head of his fleet. His flight did not take place in consequence of the Emperor's orders, but with the Emperor's permission, which he had asked for. That is a very different thing.

On 6th May the Japanese effected their landing. The railway was destroyed. We offered no resistance.

A little later it was found that this had only been a flying column of the Japanese. Railway communication was re-established. Two more large trains with war material arrived from the north; in truth, they were lucky enough just to slip through. The Japanese squadron was daily in sight of Port Arthur. The Chinese reported that something like seventy vessels were lying off Pitsevo. The Japanese apparently were still in doubt whether to disembark definitely. They did not know whether they had actually blocked up Port Arthur at their last attempt, or whether our inactivity was only to be explained by our intention to await the most favourable moment and to fall upon them when their disembarkation was in full swing.

Suppressed indignation prevailed throughout the squadron, and grew from day to day. As a matter of fact, we still had available three undamaged battleships,[1] one armoured, three first-class, and one second class protected cruisers, four gunboats and over twenty destroyers. With this force we could unquestionably have undertaken something against the disembarkation which was taking place only 60 miles from us. In the officers' messes a plan to that effect was being eagerly discussed. The spring weather frequently brought fogs. This might have been turned to account. We should have gone out as far as possible without being seen, destroyed the fleet of transports, and at once returned to Port Arthur. Of course, we should not have got off without fighting. The Japanese would have made every possible effort to prevent our safe return. We should have had to break out through the blockade of our own port. It was a matter of course that we should have suffered severely. But damages from gun-fire are always less serious than those from mines or torpedoes. We should have made good the former in greater part without dock or coffer-dam. As soon as the *Tsesarevitch, Retvisan,* and *Pobieda* were repaired, we could therefore have been up to our full numbers once more. If the battle were to end in our being decisively defeated and our main forces annihilated, it would cost the Japanese dearly. They would have been forced to stay away for a considerable time and get their ships thoroughly repaired. Meanwhile their disembarked army would have been in a sorry plight. From the number of transports we estimated the force to consist of thirty thousand men. These would have been left without provisions or land transport. The Japanese would have been obliged to fall back on the Yalu to join hands with their army operating in these regions.

---

[1] The *Sebastopol's* damages had not prevented her from getting out on the 18th March and 10th April (that is, under Makaroff).

So as to calm the general excitement, the "higher circles" started the rumour that our inactivity was part of General Kuropatkin's plan of operations. It was even said that the General had asked the Viceroy not to interfere with the landing of the Japanese to the eastward of Port Arthur, as he feared a landing at Niutchwan. Of course, no one could doubt our being victorious on land. The statement of a great general was cited to the effect that he knew of twelve different methods of landing an army, but not one of re-embarking it after a repulse. It was maintained that it would be better not to risk our ships just now. The squadron must be saved up for the moment when the Japanese were not to be allowed to return. The well-known maxim of "be careful and risk nothing" somewhat discredited these rumours. Still, no other explanation was forthcoming.

We all knew that the day before his departure the Viceroy had held a conference with the principal commanders. Its decisions were kept secret. One point, however, soon became known : the arming of the new batteries on the land front with ships' guns. A little later an order to that effect appeared. Our excitement was to be calmed by the explanation that only the guns of the damaged battleships were to be used. Moreover, this was only to be a temporary measure, whilst the ships concerned were under repair. It was not quite easy to believe all this.

On the 7th or 8th of May (I don't know the exact date, as I did not note it down) a meeting of the principal naval and military commanders, under the presidency of Stoessel, took place on board the *Sebastopol*. When our captain returned on board he told us nothing about the meeting. (This is why my diary does not contain the day and hour of this wretched event.) But on the morning of the 9th it all came out, as the orderly brought off the minutes of the proceedings, signed by all participants. This fateful document had not even been put into an envelope. Any and everybody, down to the writers and orderlies, could become acquainted with its contents. On the morning of the 9th it was brought on board the *Diana*. The captain being still asleep, I received the document. When I had opened it I had the misfortune to read what was afterwards known in the squadron as the "Great Edict of Renunciation by the Navy." The following is a verbatim quotation from my diary: "May 9.—I have accidentally read the minutes of the famous meeting. We have destroyed ourselves. What a disgrace! Thank God! two have not signed this infamy."

The minutes commenced with a statement to the effect that the squadron was momentarily in such a situation that active enterprises had no chance of success. On these grounds, therefore, all its means must be utilised for the defence of Port Arthur until better times came round again.

The spirits of all afloat were extremely depressed. They were not much better than on the day of Makaroff's death. Our last hopes vanished.

No doubt it was presumptuous, but I could not help it. I asked the captain for an explanation. How was it possible? How could anyone sign such a resolution? The captain was not in a very talkative mood. None the less, he did not hesitate to enlighten me. He said that the meeting was a mere matter of form. The Viceroy had ordered everything himself at a council of war the day before his departure. The minutes had only been drafted as a matter of form. The instructions left behind by the Viceroy were clear enough. They prescribed the programme of our future activity. Adventures *à la* Makaroff must cease, in all service matters, etc., etc. (see above).

"But why does it not appear anywhere that all this was simply *ordered* by the Viceroy? Why this comedy of the council of war? On these minutes of the proceedings the most important signature, the Viceroy's, is missing; his name is not even mentioned. Such as it now stands this paper will in the end be your 'charge sheet.' "

The captain's reply was not very clear. His contention was that when things were ordered, discussions were superfluous. A protest would anyhow not have produced any effect.

There were some who did not believe that the decision of the council of war had been laid down beforehand by the Viceroy. I can only say that all those who were present at these meetings had only one idea—how to guess aright "His Excellency's" views. That was the fault of the moral atmosphere created by Alexeieff. He who interpreted them aright was fortunate. He who tried his best but did not succeed was treated with indulgence. But if anyone dared to have an opinion of his own, it was best to put a cross before his name.[1] When the fortress and the squadron had been taken so completely by surprise by the events of the first days of the war, all our leaders were in a state of uncertainty and fear. They were in fear, not as to the fate of the fortress or the squadron, but as to their own fate, which absolutely and solely depended on "his" views of these events and "his" manner of twisting things. One of the principal reasons for the enthusiasm with which Makaroff was received was that from that moment the various commanders had no more need to break their heads over the question: "What is the Viceroy thinking?"

---

[1] The usual abbreviation for the defunct.

From December, 1899, the moment at which Admiral Alexeieff arrived at Port Arthur, the defeat of our squadron was being prepared. Alexeieff turned our ships into floating barracks, and stifled in the crews every particle of enterprise, of initiative. The power which this man wielded was great, and subject to no control whatever. He used it to force upon men, who in action later on proved themselves to be both brave and able, the conviction that it was quite useless even to attempt to influence any of his decisions—nay, more: that to hold views differing from his was a crime.

This hypnotic state lasted for many years. The feeling of repression under which the squadron lived during the Viceroy's presence was so great that it eventually crept into our flesh and blood. We felt it for a long time, long after Admiral Alexeieff had fled, long after Port Arthur had been besieged and cut off from the rest of the world.

(*To be continued.*)

THE WAR IN THE PENINSULA, 1808-14.

VALUABLE NOTES FROM RECENTLY DISCOVERED DIARIES OF THE WAR, NOW BEING PUBLISHED IN "EL IMPARCIAL," OF MADRID.

Précis by Major-General J. C. DALTON, R.A.

I.

THE well-known Spanish journal *El Imparcial* has been for some time publishing in its Monday issues (commencing 8th March, 1909) a series of highly interesting historical extracts from manuscript diaries referring to the War of Independence (1808-14), which have kindly been sent to me as they appeared by the compiler, Major D. Juan Arzadun, of the Spanish Artillery, an officer who has already made his mark as an eloquent writer on historical subjects.

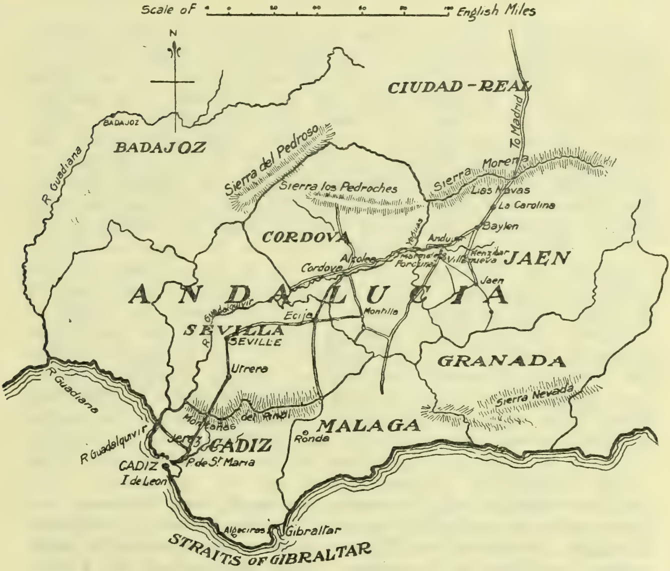
The articles in question are prefaced by a scholarly and interesting preamble by the well-known writer and Academician, D. Jacinto Octavio Picón, who pays a deserved tribute to the Editor of the manuscripts and to the historical value of the contents.

D. Juan Arzadun has had the good fortune to discover the whereabouts of these precious documents, which have lain idle and unnoticed for 100 years in the archives of the noble family of the Dukes of Ahumada at Ronda. They consist of five volumes of documents collected by the distinguished Spanish General, D. Pedro Augustin Girón (nephew of Marshal Castaños, hero of Bailen), who played an important part in the War of Independence, his first experience of that war being on the 7th June, 1808, when he took part in the defence of the bridge of Alcolea and witnessed the infamous sack of Cordova by the French under Dupont. General Castaños conferred on his nephew the rank of Major-General, and entrusted him with the organisation of the infantry of the hastily improvised army with which within a few weeks Castaños had defeated the enemy and captured the entire French force at Bailen.[1] The honour of conveying the news to the local government at Seville fell to General Girón. During the whole war, General Girón preserved all important documents which came into his hands, including original plans of battles, parade states of the forces engaged, lists of casualties, orders for operations, etc., and innumerable facts which are invaluable to the historian as supplying gaps in the national archives. All are freely explained and annotated in proper sequence.

---

[1] See account of this battle in "Journal of the Royal Artillery Institution," February, 1909. This was written before these MSS. were known of, and though it is not now proposed to dwell at length on the account of the battle, which is well described in Oman's "Peninsular War," anything new will be noted, especially as regards the preliminaries before the battle. A sketch map has been made to render the account more clear.—J.C.D.

These manuscripts include packets of original letters from well-known generals such as Santocildes, España, Morillo, Castaños, etc., who in their private and friendly correspondence express frankly and often with professional severity their views as regards their quarrels, dissensions, and partialities. In the opinion of Major Arzadun, the bulk of these documents appeals chiefly to a special class of reader only; but there are moments when from these sheets of paper which have become yellow from age, there emanate thrilling accounts of fights, enterprises, episodes, and adventures which bring to light intensely interesting facts hitherto unknown, and shed a splendour and halo around men and things of that epoch. Surely these should interest the general public? To this query D. Jacinto Picón has no hesitation in replying in the affirmative. Such records must inspire a proper spirit in the people of his country, consoling them for much that may have distressed them, checking any tendency to pessimism and affording encouraging food for



thought. They shed lustre, though tardily, on the names of many modest men who sacrificed themselves heroically; they show the important part played by the "juntas," local authorities, and organisations whose efforts remain so far unknown. They also show up many fallacies hitherto credited, which it is high time should be dissipated.

Space does not permit me to dwell as long as I should like to on the eloquent and instructive preamble of D. Jacinto Picón, so entirely temperate and carefully balanced; but I recommend my readers to read it for themselves in the issue of the *Imparcial* of the 8th March, 1909. The compiler of the manuscripts, Major Arzadun, attaches much value to them for the light they throw on the work of the army and on its admirable self-abnegation in its efforts to repel the invader.

II.

D. Pedro Augustin Girón was eldest son of Lieut.-General Jeronimo, third Marques de las Amarillas, a worthy scion of a race of soldiers. He was early educated to war, as he served as A.D.C. to his father from the age of fifteen. At the age of twenty the King promoted him to captain in recognition of the services of the father, and his whole life was thenceforward devoted to the study of his profession in peace and war, including an expedition to the Balearic Islands, the defence of Galicia against the English, the campaign of 1801 in Portugal, defence of Cadiz against the attacks of the British fleets, and in the expedition to Portugal under the Marques del Socorro. On the 2nd of June, 1808, he was ordered to Cordova to oppose the advance of the French General Dupont, and, as stated above, Girón defended the bridge of Alcolea. His conduct may be judged from an intercepted despatch from Dupont to Napoleon: "The Spanish troops of the line who defended the bridge of Alcolea rivalled in valour and discipline the valiant legions of Your Majesty." Promoted three days later by his uncle, General Castaños, to major-general, he was responsible for the organisation of the infantry which took part in the glorious victory of Bailen (19th June, 1808), though he personally was not in the action. This brilliant episode, which promised so much, was, however, unfortunately succeeded by the overwhelming disasters of Ciudad Rodrigo, Almonacid, and Ocana, which were redeemed to some extent by Girón at Aranjuez, where he checked the French General Sebastiani in his attempt to force the passage of the Tagus, and at Arroyo Molinos. Finally, after being entrusted with the reorganisation of three armies, his army of Galicia, in conjunction with that of the Duke of Wellington, drove the French across the Bidassoa, and the brave leader reaped the reward of his labours in the successes which followed, culminating in the decisive victory of Vittoria.

The letters and papers selected by Major Arzadun for the purpose of this series of articles bear clear evidence of Girón's absolute disregard of self, his determination not to be discouraged by lack of food, clothing, and munitions of war, or by the disasters reported on all sides, and of his ardent patriotism. His righteous indignation at the incompetency of the Regency was fully shared by Wellington. Girón's remark, on hearing of the disgraceful surrender of 18,000 men under the Spanish leader Blake at Valencia, was: "Never mind, keep ever advancing, and we shall come out at the end with our own."

Though Girón could not bear to complain, he was driven to desperation by the ill-treatment accorded to the army he loved, and from his headquarters at Rueda he addressed, on the 4th November, 1812, the following eloquent remonstrance to the Regency: " . . . . . I should deceive Your Highness did I pretend that reliance can be placed on an army administered in this manner. It is vain to assemble men and take steps to discipline them if from the first they are forced by hunger to quit their colours in order to seek, either in their homes or elsewhere, the nourishment which is indispensable to them, and which cannot be given them in the army. Force of will is arrested, owing to physical privations, at a line which human nature cannot pass.

"The allied army united to ours has enjoyed abundance during all this time, and our soldiers associated with the English on the field have been forced to endure hunger and misery whilst in full view of their allies' abundance and opulence. This aggravates the situation and wounds the spirit even more than the body.

"I should be wanting in my duty if I did not say frankly that it the nation thinks she can have an army which she neither clothes, pays or feeds, and which in consequence cannot be trained or disciplined or kept robust and content, she makes a fatal mistake, of which ample evidence will constantly be cropping up."

And the famous leader signed the above virile protest with his full name, prefixing the initial "C."—that of a lady—reminding one of the chivalry of the middle ages:—

"C. Pedro Augustin Girón."

All the archives of the Supreme Junta (which virtually assumed the functions of Regency in Seville) were lost when the French entered Seville. The President of the Junta, D. Francisco de Saavedra, had, however, regularly kept a diary, which by some mischance disappeared when he retired to the Isla de Leon. After careful enquiry, General Girón succeeded in recovering this valuable document, and from it are extracted the facts relating to the genesis of the memorable campaign in Andalusia, the great success of which was afterwards neutralised by unpardonable slackness and incompetency.

When on the 26th May, 1808, the people heard of the renunciation of his rights by the King, Carlos IV., at Báyonne, they at once proceeded to seize arms from the Maestranza at

Seville and proclaimed an insurrection, and on the following day congregated armed in the Plaza San Francisco, swore allegiance to Fernando VII. as King of Spain and the Indies, declared war against the Emperor of the French, deposed all the existing authorities, and reappointed from them and others a Junta composed of twenty-four persons.

This Junta is ridiculed because it assumed the title of Supreme; but this may be pardoned from the fact that Andalusia was, of all Spain, the only province as yet uninvaded and mistress of her own affairs, and she looked on it as her sacred duty to initiate the re-conquest of her country.

The cosmopolitan nature of the composition of the Junta is remarkable. As President it elected the illustrious Councillor of State, D. Francisco de Saavedra, whose services were well known and appreciated. The clergy were represented by the Archbishop, the Dean of the Cathedral, a Canon and two monks; the army by three field marshals; the nobility by three titles of Castile and two caballeros; the city by four members of the municipality; commerce by two merchants of high repute, and so on, the secretary being an officer of artillery. Soon, as was natural, the field-marshals had to go, called to higher duties, and in order to have a high official whom the Junta might consult on military matters, the brigadier-general of artillery, D. Vicenti Maturana was elected, whose health did not admit of active work in the field, and he acted as adjutant-general to the Junta. It may seem strange at first sight that the Junta should have selected an invalid general as the sole military representative on a Council whose first duty consisted in organising an army; but in the opinion of Major Arzadun this was in reality an advantage, as it meant that it reduced to a minimum the influence and interference which an assembly of civilians might exert as regards the army, and left the General Commanding-in-Chief practically a free hand. Unfortunately, this most prudent line of conduct was abandoned later with disastrous consequences. One of the first acts of the "Junta Suprema" was to decree obligatory service, the only exemptions being "physical impossibility." All the veterans of the army and provincial militias were called in, and they elected as Commander-in Chief the Marques del Socorro, Governor of Cadiz, but the messenger sent to Cadiz on the 28th May to announce the appointment returned on the 30th to Seville, reporting that the unfortunate general had fallen a victim to duty in the disturbances in Cadiz. The Junta lost no time, and that same night Castaños, then Governor of the Campo of San Roque, was offered the appointment, and his acceptance was known in Seville on the 31st. Matters could hardly have been more expeditiously arranged, even in the present days of railways and electric telegraphs.

The French General Dupont was expected to be through the passes of the Sierra Morena at the head of 16,000 (really 13,000) men by June, 1809, and though he was delayed in Carolina owing to the unexpected hostile attitude of the people, he seemed resolved to hurry on to Cordova, so as to arrive in Seville on the 8th, according to Murat's orders.

In face of this imminent danger, besides accelerating the assembly of the veteran and other forces, the Junta reinforced D. Pedro de Echevarrí, who commanded some detachments of troops in the Sierra, with the 3rd Division of provincial Grenadiers and a half battalion of Campo Mayor, which, on its retirement from Portugal, was now in Ronda. From the artillery park at Seville there were sent post haste eight guns under Captain Caceres, who later distinguished himself in the battle of Bailen.

According to the personal testimony of General Girón, the bridge of Alcolea was, on the evening of the 6th June, occupied by the 1,400 men above mentioned (under Echevarrí) with two guns well placed, this force being strengthened by some improvised battalions of peasants under the command of D. Joaquin de la Chica, colonel of Grenadiers. The balance of the numerous but untrained civilian force was placed in position at "Cuesta de la Lancha," between the bridge and Cordova.

For want of time and means, the defensive works were limited to a bridge-head large enough to take 60 men on the parapet.

The defenders well knew that they could not expect, with such limited forces, to prevent the passage of the river, which at that time of the year was easily fordable almost anywhere; but any attempt to retire would have been misconstrued by the masses of people assembled there, who would treat it as cowardly.

At 4 a.m. on the 7th June the enemy opened fire from twelve guns for an hour and a half on the feeble defences. "Ours replied without intermission, and our troops endured the fire with the utmost *sang-froid,* although it was accurate and at short range." The first attack was gallantly repulsed by Campo Mayor's fifty men under Captain D. Rafael Lasale, who defended the bridge-head; but the attacking column being reinforced and persistent, a retirement was necessitated.

The two battalions of Grenadiers situated on the left of the bridge and the rest of Campo Mayor's men on the right succeeded in retarding the enemy from cover of adjacent houses, but, greatly outnumbered, "they retired in excellent order and saving their guns, which had remained in action till the last moment."

At 1,500 paces from the bridge the troops re-formed in order of battle in rear guard formation, but were ordered by Echevarrí to first of all take up a position adjoining a house called "Monton de tierra," and later at the "Cuesta de la Lancha," which was accomplished in good order. Unfortunately the attitude of the irregular levies did not correspond with the enthusiasm of which they showed themselves possessed. On the other hand, the firmness of the exiguous force of Regulars brought home to Dupont the dangers of his hazardous enterprise.

In the Council of War assembled by Echevarrí on the occasion of the orderly retreat to Cuesta de la Lancha, Lieut.-Colonel D. Pedro A. Girón, of the Grenadiers, as the junior, had to speak first, and expressed himself as follows: "That considering the small number of veteran troops which they could oppose to the enemy, and to the uselessness of the peasant levies in the open, they should retire within the enceinte of Cordova, because behind the walls of a city every brave man is a soldier. He reminded his hearers of the recent defence of Buenos Ayres, and urged that with a vigorous and determined resistance they would give time to unite the forces under the command of General Castaños, which form the army of Andalusia, and that time was what they wanted to gain at all costs." Girón's opinion was shared by the other brigadiers, and Echevarrí gave orders accordingly.

Unfortunately the close proximity of the enemy produced in the irregulars the usual effects of indiscipline, and led them to the conclusion that though their patriotism had assembled them there, it was never intended that they should be trusted, except when behind parapets.

The veteran corps pursued their retirement quietly, preceded by the guns, but on arriving at the gates of Cordova these were shut against them. The unfortunate Cordovese thought thus to avoid the horrors of the sack of which they were to become victims. In vain did they at last open them under threats; it was already too late to prepare the defence, and the brave soldiers could do no more than pass through the city, abandoning it to its sad fate.

When the news of this natural contingency reached Seville, "an inexplicable panic ensued. Already everyone expected to see Dupont at their gates at the head of his legions. This was confirmed by a threatening letter from Dupont informing them, amongst other things, that no alternative remained to the insurgent Junta in Seville between the halter or flight."

It is much to the credit of the Junta that it continued calmly to carry out its plans, making renewed efforts to assemble troops from Cadiz and Ronda to the number of 10,000 men, who were encamped on the great plain of Tablada.

It seemed only natural that Dupont should quickly fall on Seville. In expectation of his advance, a messenger was in readiness to be despatched to Puerto de Santa Maria to the English General Spencer, asking for assistance, when news of the enemy was brought by a spy which at once calmed the public mind and gave fresh confidence to the impressionable Sevillanos.

This news was not to the effect that reinforcements had unexpectedly arrived, or that the Spanish arms had achieved a success. It was the news of the horrors, the rapine, and sacrilege committed by the French in Cordova, and it sufficed to calm the minds and stiffen the resolution of the people of Seville!

In the words of Saavedra, "We understood from that moment that we had to face an enemy who thought of self-interest before glory."

A nation which, in such critical moments, can feel contempt for an enemy is in a fair way towards overcoming him.

III.

THE PRELIMINARIES BEFORE BAILEN.

To restore confidence in Seville after the shock of Alcolea, Castaños entered the city on the 9th of June at the head of a few battalions of veterans. The Junta, in consultation with him, proceeded at once to form a plan to reorganise the army. The President of the Council, Saavedra, had served in the army, and his military knowledge added to the value of his proved statesmanship.

Briefly, the agreement come to was not to dismember the budding army of some 24,000 men, including 3,000 cavalry, but, whilst avoiding the formation of new corps, to strengthen the existing ones by enthusiastic recruits. Drill and instruction were to be proceeded with vigorously from dawn to nightfall, and skilled engineers and others were to reconnoitre ground for possible defensive positions and camps. Meanwhile, should Dupont show signs of agression, the excellent defensive position offered by the Alcores should be availed of.

Rumours of an early advance by Dupont led to a ruse which afterwards produced excellent results. Popular exaggeration had magnified the English force of some 5,000 to 6,000 men, who had disembarked in the Port of Santa Maria, to 20,000. It was easy to convince the French that this was true, since they were already under the firm idea that the revolution in Spain was due to "English gold." As it was desirable to foster this belief, "men were employed to distribute letters, which came into the enemy's hands, in which the inhabitants were informed that in the vicinity of Seville there was already assembled a large army composed of veteran troops drawn from Cadiz and from the force which had retired from Portugal, which would at any moment be reinforced by 15,000 English; that they need have no fears, because two formidable corps were ready to fall on the French. This artifice, which was well carried out and 'supported by other devices,' was eminently successful; it delayed Dupont, intimidated him, and explains the incomprehensible line of conduct which he subsequently adopted. Moreover, these letters had a further reaching effect; they were produced at the court-martial on Dupont on his return to France to answer for his surrender, and saved him from the capital penalty."

The "other devices" referred to above were as follows: Dupont, anxious to prove the truth of the reports which came to his ears, sent a messenger under a flag of truce to the Spanish camp under the pretext of summoning D. Nazario Reding (Colonel of Swiss in the Spanish service) to return under threat of severe penalties. Colonel Reding had been forced, when in Madrid, to pass over to the French, and had managed to return to his allegiance whilst Dupont was negotiating the passes of the Sierra Morena. It was quite clear that this was only a futile pretext to disguise Dupont's real intention to observe the Spanish forces. "It was manifest that the two *parlementaires,* nominally a corporal and a trumpeter, were men of superior birth and intelligence to those they represented themselves to be." They were received with military precautions and their eyes blindfolded, and whilst being conducted through the camp it was so arranged, by removing the bandages at convenient times, that an impression should be conveyed to them that they were in the midst of a numerous and well-organised army. "They were purposely escorted through the camp of an Irish regiment (one of three in the Spanish service), were allowed to see the scarlet uniforms, and naturally mistook them for English, thereby confirming the rumours which had reached Dupont."

A proof of the deception practised on Dupont is afforded by his letter to Murat, in which he estimates the Regular troops advancing against him at 25,000; and as it was well known in Madrid that there were only 10,000 Spanish Regulars throughout Andalusia, the numbers arrived at could only be obtained by adding the 15,000 imaginary English.

More troops now kept arriving from Ronda and Cadiz, also some cavalry; the Jerez regiment of lancers was completed, and a brilliant regiment of cavalry was formed from the body-guards and Royal Carabineers who had escaped from Madrid, under the title of the "Carabineers of Fernando VII."

The most important decision, however, and one which historians have to some extent overlooked, was that of fixing the headquarters of the army at Utrera, leaving in Carmona only 4,500 veterans under the orders of Brigadier-General the Marques de Coupigné. It required no small moral courage to do this, because by thus leaving open the road from Cordova to Seville, a sudden alarm might at any time so affect the already excitable and timorous populace as to cause them to vent their rancour on the general who was responsible for this action, in which case his life would have for a certainty paid forfeit.

General Girón thus alludes to this subject: "It was decided to show ourselves superior to the popular opinions and delusions which matter so little in time of peace but are so powerful and decisive on occasions of riots and tumult, and the measure now decided on, which would be so simple in times of tranquillity but so risky in time of danger, contributed in no small measure to the success of the campaign."

The Junta lost no means of procuring funds for the army. A considerable sum was raised by subscription in Gibraltar, but in order to pave the way for a loan it was arranged to facilitate the sale of English goods which, under the circumstances of that time, could not prejudice the Spanish factories, and by that means it succeeded in reducing smuggling.

"Seville became converted into a clothing store and workshop, in which thousands of persons of both sexes were constantly at work on uniforms for the army."

To obtain the necessary transport for the advance of the troops, "all who were able sacrificed their carriages," and in a few days horses were collected to complete the attenuated cavalry units which had been robbed of their horses and men to supply the five regiments which accompanied the Marques de Romana to Denmark, and to find 2,000 horses to replace those exacted by Napoleon for the expedition to Portugal. In June, 1808, the cavalry had less than one-third of their men mounted.

By the exertions of Brigadier-General Maturane and other officers, it was possible within a short space of time to despatch to the army three excellent companies of Horse Artillery (the only branch of the corps which in those days had its own horses, the others having to use contract drivers and animals) and also a fine train of Artillery, well provided with all stores and good artificers.

But one main necessity troubled the minds of the zealous organisers. They wanted powder, and it was neither advisable to denude Cadiz, which was badly supplied, nor to rob the navy, "which had but little, and that bad." To provide this chief essential, the Junta summoned D. Pedro Fuertes, "a clever chemist and very active," who, with the very scanty means at his disposal, manufactured a small amount of powder which was tested by the Artillery officers and found to be of good quality. Fortunately other means for obtaining powder came to hand, but this was the origin of the powder factory at Seville, which later did much valuable service.

Serious abuses were discovered in connection with the distribution of the horses which were obtained as gifts or on requisition, and this led to the Junta appointing one of its members to deal with this question, the Marques de Grañina, who was assisted later by a retired officer, "both of incorruptible integrity and great intelligence." And when at the end of 1809 they rendered an account of their work they were found to have distributed through the army 16,439 horses from Seville and its district.

Similarly, care was taken to organise transport, so as to increase the mobility of the army, and ammuniton and provision columns were created. Valuable assistance was accorded to the Junta by a German called Ulman, who had much experience of military administration, having served under the Archduke Charles in several campaigns.

The expected advance of the French army was carefully guarded against from one day to another, and defensive measures perfected, until there suddenly came news from the commander of the armed peasants, who were watching the enemy, to the effect "that General Dupont, impressed by the news which he kept receiving of the great strength of the Spanish troops who were concentrating in the vicinity of Seville, and of the English who were marching to join them, considered his position very exposed, and was attempting to retire by the 'los Pedroches' road, but that, finding this road difficult for cavalry and impracticable for artillery, had retired in the direction of Jaen. This retirement was represented as a veritable flight, because Dupont had abandoned his wagons, ammunition, clothing, and other articles of value in the camp at Cordova, had destroyed the bridge of Alcolea in such a hurry that he had left on our side his guerillas, who, to the number of 200, had fallen into the hands of our skirmishers." So great and rapid was the effect produced on him by the simple ruse of the letters!

The most cordial feelings were now established between the brave army and enthusiastic people, and the recruits worked valiantly in order to qualify themselves to fight alongside of such gallant veterans.

General Castaños gratefully acknowledged these efforts, and as the day approached for marching against the immobile enemy, he weighed the progress made, which moreover impressed the English officers who had collected to witness it.

In informing the Junta of this satisfactory state of affairs, the President energetically affirmed "that nothing must be left to chance which could be allied to prudence," and exhorted all to redouble their efforts, summoned the Artillery Commander, the Marques de Medina, to decide details referring to his branch; the Commissary, Andueza, to expedite the clothing, and so on. In fact, as General Girón writes, "The city of Seville gave me the idea of an immense arsenal, and the road to Utrera was like a fair."

The love of the people for the army at that time was made evident in many and substantial ways. For example, every effort was made to study most minutely "the means for supplying bread and other articles of food of the best quality for the army, for insuring that the troops should always be paid in metal currency, and that purveyors of provisions should receive good treatment, security, and protection."

Such were the simple measures which, during the interminable struggle about to follow, secured to the English abundant maintenance; if this was wanting to the poor Spanish soldiers in those sad years, it was not due to ignorance but to misery.

Wise sanitary precautions as to the dietary of the troops were taken by the Junta, thereby diminishing the risk of dysentery and kindred ailments—a most salutary measure which entailed beneficent results.

(*To be continued.*)

NAVAL NOTES.

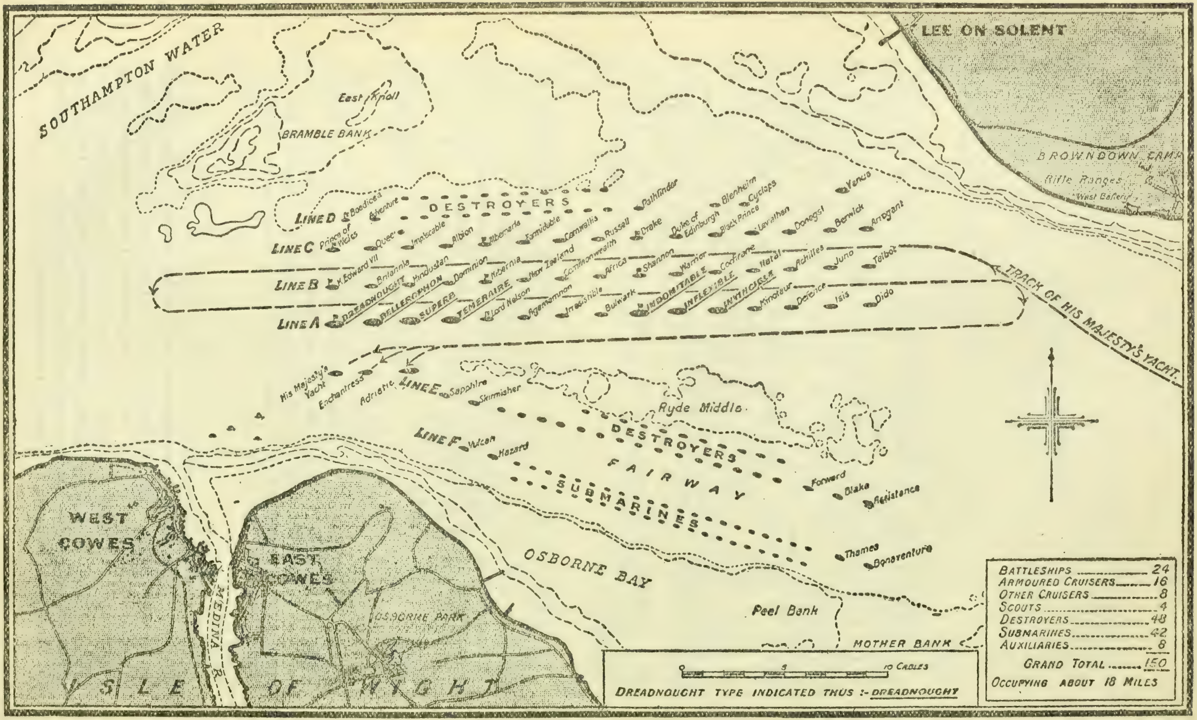
Home. The following are the principal appointments which have been made :—

Rear-Admirals—Sir Colin R. Keppel, K.C.V.O., C.B., D.S.O., to be Rear-Admiral in Atlantic Fleet; R. N. Ommaney to be Admiral Superintendent, Chatham Dockyard. Captains—A. Moore, M.V.O., to be "Captain of the Fleet" and Chief of the Staff in the Home Fleet, with rank as Commodore, 1st Class; N. C. Palmer, M.V.O., to be Commodore, 2nd Class, in Command of H.M. Yachts; R. E. Wemyss, M.V.O., to be Commodore, 2nd Class, in Command of R.N. Barracks, Devonport; M. E. Browning, M.V.O., to "Britannia"; Hon. H. G. Brand, M.V.O., to "Drake"; C. M. De Bartolomé to "Indomitable"; W. De Salis, M.V.O., to "Russell"; J. Nicolas to "Flora"; E. W. Wemyss to "Cambrian"; W. H. Cowan, D.S.O., to "Cressy"; R. F. Phillimore to "Aboukir"; R. Y. Tyrwhitt to "Topaze," and as Captain of Destroyers of Portsmouth Destroyer Flotilla; E. H. Grafton to "Terrible"; H. Richmond to "Dreadnought." Commanders—H. J. Marshall to "Proserpine"; H. B. Montagu to "Psyche"; J. G. de O. Coke to "Sentinel"; J. Harvey to "Sphinx"; S. H. Radcliffe to "Pyramus."

The first-class armoured cruiser *Drake*, flagship of Rear-Admiral the Hon. S. C. J. Colville, C.V.O., C.B., Commanding the First Cruiser Squadron, was paid off on the 26th ult. at Portsmouth, the flag of Rear-Admiral Colville being transferred to the new first-class armoured cruiser *Indomitable*, which becomes the flagship of the squadron. The *Drake* recommissioned on the following day as flagship of the Fifth Cruiser Squadron, Rear-Admiral F. T. Hamilton, C.V.O., Commanding the Squadron, transferring his flag to her from the *Good Hope*, which ship is to be paid off at Portsmouth and undergo a thorough refit.

Commodore E. F. B. Charlton, Commanding the First Destroyer Flotilla, has transferred his broad pennant from the third-class cruiser *Topaze* to the new third-class cruiser *Boadicea*. The *Topaze* paid off on the 9th inst. at Chatham and was recommissioned the following day by Captain R. Y. Tyrwhitt as parent ship of the Portsmouth Destroyer Flotilla.

Review of the Home and Atlantic Fleets by the King and the Tsar.—The Home and Atlantic Fleets were reviewed on the 31st ult. by His Majesty the King off Cowes. The two fleets, which are practically the same as were mustered at Spithead for the visit of the Imperial Press Delegates on the 12th June, were anchored in three main lines, with the heads of the columns towards Cowes, the flagships lying almost abreast of the Royal Yacht. The destroyers and submarines were anchored in six other lines on both sides of the three main columns, as shown in the accompanying chart.


SOUTHAMPTON WATER
East Knoll
BRAMBLE BANK
LEE ON SOLENT
BROWNDOWN CAMP
Rifle Ranges
West Battery
DESTROYERS
LINE D
Boadicea
Adventure
Pathfinder
Blenheim
Cyclops
Venus
LINE C
Prince of Wales
Queen
Implacable
Albion
Albemarle
Formidable
Cornwallis
Russell
Drake
Duke of Edinburgh
Black Prince
Leviathan
Donegal
Berwick
Arrogant
LINE B
K. Edward VII
Britannia
Hindustan
Dominion
Hibernia
New Zealand
Commonwealth
Africa
Shannon
Warrior
Cochrane
Natal
Achilles
Juno
Talbot
LINE A
DREADNOUGHT
BELLEROPHON
SUPERB
TEMERAIRE
Lord Nelson
Agamemnon
Irresistible
Bulwark
INDOMITABLE
INFLEXIBLE
INVINCIBLE
Minotaur
Defence
Isis
Dido
TRACK OF HIS MAJESTY'S YACHT.
His Majesty's Yacht
Enchantress
Adriatic
LINE E
Sapphire
Skirmisher
Ryde Middle
LINE F
Vulcan
Hazard
DESTROYERS
FAIRWAY
SUBMARINES
Forward
Blake
Resistance
Thames
Bonaventure
OSBORNE BAY
Peel Bank
MOTHER BANK
WEST COWES
EAST COWES
MEDINA R.
OSBORNE PARK
ISLE OF WIGHT
0
5
10 CABLES
DREADNOUGHT TYPE INDICATED THUS :- DREADNOUGHT
BATTLESHIPS 24
ARMOURED CRUISERS 16
OTHER CRUISERS 8
SCOUTS 4
DESTROYERS 48
SUBMARINES 42
AUXILIARIES 8
GRAND TOTAL 150
OCCUPYING ABOUT 18 MILES

Home.

The lines were composed as follows :—

Line A.—Battleships : *Dreadnought* (flagship of Admiral Sir W. May, K.C.B., K.C.V.O., Commander-in-Chief, Home Fleet), *Bellerophon, Superb, Téméraire, Lord Nelson* (flagship of Rear-Admiral C. J. Briggs), *Agamemnon, Irresistible, Bulwark.* Cruisers : *Indomitable* (flagship of Rear-Admiral the Hon. S. C. J. Colville, C.V.O., C.B., Commanding First Cruiser Squadron), *Inflexible, Invincible, Minotaur, Defence, Isis, Dido.*

Line B.—Battleships : *King Edward VII.* (flagship of Vice-Admiral Sir A. B. Milne, Bart., K.C.B., K.C.V.O., Second-in-Command of Home Fleet), *Britannia, Hindustan, Hibernia* (flagship of Rear-Admiral J. Startin), *New Zealand, Commonwealth, Africa.* Cruisers : *Shannon* (flagship of Rear-Admiral R. S. Lowry, Commanding Second Cruiser Squadron), *Warrior, Cochrane, Natal, Achilles, Juno, Talbot.*

Line C.—Battleships : *Prince of Wales* (flagship of Vice-Admiral Prince Louis of Battenberg, G.C.B., G.C.V.O., etc., Commander-in-Chief, Atlantic Fleet), *Queen, Implacable, Albion, Albemarle* (flagship of Rear-Admiral W. B. Fisher, C.B.), *Formidable, Cornwallis, Russell.* Cruisers : *Drake* (flagship of Rear-Admiral F. T. Hamilton, C.V.O., Commanding 5th Cruiser Squadron), *Duke of Edinburgh, Argyll, Leviathan* (flagship of Rear-Admiral A. M. Farquhar, C.V.O., Commanding 4th Cruiser Squadron), *Donegal, Berwick, Arrogant.*

Line D.—Scouts, etc. : *Boadicea* (broad pennant of Commodore E. F. B. Charlton), *Adventure, Pathfinder, Blenheim* (depôt ship), *Cyclops* (depôt ship), and eleven destroyers.

Line E.—Scouts, etc. : *Sapphire, Skirmisher, Forward, Blake* (depôt ship), *Assistance* (depôt ship), and fifteen destroyers.

Line F.—Submarines, etc. : *Vulcan, Hazard, Thames, Bonaventure,* (depôt ship), and twenty-one submarines.

North of Line D.—Eleven destroyers.

North of Line E.—Eleven destroyers.

South of Line F.—Twenty-one submarines.

Lines A, B, C, and D were moored (ships in the order named) north of Ryde Middle Shoals, the three flagships, *Dreadnought, King Edward VII.,* and *Prince of Wales,* being approximately north of Old Castle Point. Line A being the southern line, the lines extending to the eastward towards Stokes Bay.

Their Majesties arrived from Goodwood on the afternoon of the 30th and slept on board the Royal Yacht.

At 11.30 a.m. on the 31st, the *Victoria and Albert* left Portsmouth Harbour and anchored at the Motherbank. At 2.30 p.m. the Royal Yacht weighed again and, preceded as usual by the Trinity Yacht *Irene* and three destroyers, steamed towards the fleet, entering between the lines B and C at 2.45, under a Royal Salute, while the ships were dressed and manned. The *Victoria and Albert* was followed by the Royal Yachts *Alexandra* and *Alberta;* then came the *Enchantress,* flying the Admiralty flag; the *Fire Queen,* flying the flag of Admiral A. Fanshawe, Commander-in-Chief at Portsmouth, and the *Adriatic,* with the Members of the Lords and Commons. Having arrived at the western extremity the Royal flotilla turned and steamed eastward again between the lines B and A, and then turning to the westward steamed between the line A and the Isle of Wight, as shown in the chart, finally anchoring abeam of the *Dreadnought*. A spectacular display by destroyers and submarines was then made by an attack on the *Dreadnought* and her sister ships, which brought the proceedings to a close, after which the Royal Yacht proceeded to her moorings in Cowes Roads.

On Monday, the 2nd inst., the fleet was reviewed by the Tsar on his arrival to visit the King. The Imperial Yacht *Standart*, which was accompanied by the smaller yacht *Polar Star* and the Russian armoured cruisers *Rurik* and *Admiral Makaroff*, with two destroyers, the *Emir Bukharske* and *Moskvitjanin*, and escorted by a French squadron, consisting of the armoured cruisers *Marseillaise* (flying the flag of Rear-Admiral Auvert, Commanding the Atlantic Divison of the French Northern Squadron), *Amiral-Gueydon*, *Amiral-Aube*, and *Dupetit-Thouars*, with ten destroyers, was met in the Channel, half-way between Cherbourg and Spithead, by the armoured cruisers *Indomitable* (flying the flag of Rear-Admiral Colville), *Inflexible*, and *Invincible*, who took over the escort duty from the French ships. These, on the approach of the English squadron, altered course to return to Cherbourg, firing a Royal Salute as they did so. The British escort simultaneously altered course so as to take station ahead of the *Standart;* at the same time the ships were manned and a Royal Salute fired, which was immediately returned by the Russian cruisers astern of the Imperial Yacht, course being then shaped for the return to Spithead and Cowes.

About ten minutes to 11 the *Victoria and Albert*, with the King and Queen and other members of the Royal Family on board, slipped from her moorings and with the Trinity Yacht *Irene* preceding her, steamed towards Spithead. As she entered the lines of the battleships, between the *Dreadnought* and *King Edward VII.*, the ships were manned and a Royal Salute fired. Having passed through the lines, the yacht anchored off Ryde to await the arrival of the Tsar, which took place shortly after noon, the *Standart* anchoring in close proximity to the Royal Yacht, the other Russian ships anchoring in the vicinity. At 12.30 p.m., the King and Queen, accompanied by the Prince and Princess of Wales and other members of the Royal Family, proceeded on board the *Standart* and welcomed their Imperial Majesties to England, returning then, accompanied by the Emperor and Empress, to the *Victoria and Albert*. After luncheon, about 3.15 p.m., the *Victoria and Albert* weighed, and preceded by three destroyers and the *Irene*, and followed by the *Standart*, *Polar Star*, and the two Russian cruisers and destroyers, she passed through the lines, following the same course round the fleet as on the previous Saturday, then steering direct back to her moorings off Cowes, closely followed by the *Standart*, which made fast to a buoy prepared for her a little to the east, the *Polar Star* and the cruisers anchoring in line with the *Enchantress*, north of the fairway. During the review the King stood on the bridge of the yacht with the Tsar alongside him.

On the morning of the following day (3rd inst.) the fleet dispersed, the *Bellerophon* only remaining to act as guardship during the remainder of the King's stay at Cowes, with the three armoured cruisers *Indomitable*, *Inflexible*, and *Invincible*, on which three ships again devolved the duty of escorting the Tsar safely out of English waters when he took his departure on the afternoon of Thursday, the 5th inst. At half-past three on that

Home.

day, after the race for the cups which the Tsar had presented was finished, the *Standart* slipped from her buoy, and under a salute from the *Bellerophon*, which was returned by the *Admiral Makaroff*, proceeded eastward through Spithead, the three English cruisers leading, followed by the *Standart*, the *Polar Star*, the *Admiral Makaroff*, and the *Rurik*, the two Russian destroyers taking up their position one on each beam of the Imperial Yacht, and by five o'clock all the vessels had disappeared from view at Spithead to the eastward.

The Fleet in the Thames.—On Saturday, the 17th ult., after the conclusion of the tactical exercises which followed the manœuvres, the Home and Atlantic Fleets arrived in the Thames, where they remained until the following Friday. The battleships and large cruisers were anchored between Southend and the Nore, the 1st Division of the Home Fleet, with the ships of the 1st Cruiser Squadron, being anchored in single line, the *Dreadnought*, at the head, being off Southend pier. Farther out, in two lines, lay the 2nd Division of the Home Fleet and the Atlantic Fleet, with the armoured cruisers of the 2nd, 4th, and 5th Cruiser Squadrons. The smaller protected cruisers, the scouts, with 4 destroyers, 6 torpedo boats, and 6 submarines, were distributed up the river at different points from Gravesend as far as the Houses of Parliament, off which were moored four of the submarines; below Westminster Bridge were moored four first-class torpedo boats and two more submarines; below London Bridge lay the *Hazard*, four destroyers and the scout *Skirmisher;* between Greenwich and Woolwich came the third-class cruiser *Sapphire*, the three scouts *Forward, Adventure*, and *Pathfinder*, and the third-class cruiser *Topaze* in Barking Reach. Lower down the river, off Erith, was the second-class cruiser *Talbot*, and finally between Greenhithe and Gravesend came the second-class cruisers *Dido, Isis, Juno, Arrogant*, and *Venus.* The remaining destroyers and submarines, with their parent ships, and the two fleet repair ships *Cyclops* and *Assistance*, attached respectively to the two divisions of the Home Fleet, lay with the main body of the fleet off Southend.

On Tuesday, 20th ult., an official visit was paid to the Fleet at Southend by the Lord Mayor of London, the Lords of the Admiralty being also present in the Admiralty Yacht *Enchantress.* On Wednesday 40 officers and 1,200 men, with six field guns, proceeded to London, and after marching through some of the principal streets in the City, officers and men were entertained at lunch at the Guildhall by the Lord Mayor. On Thursday the Lord Mayor also entertained at lunch at the Guildhall Admiral Sir W. May and 500 officers of the Fleet. On Saturday, the 24th, the Fleet left the Thames.

Austria-Hungary.

Naval Estimates for 1909. — The Ordinary Budget for the coming year amounts to 58,987,310 kronen (£2,457,805), showing an increase of 5,464,200 kronen (£227,675) over 1908; and the Extraordinary Estimates amount to 4,450,550 kronen (£185,349), showing an increase of 973,660 kronen (£40,569) as compared with last year, making a grand total of 63,437,860 kronen (£2,643,244) for both Budgets, or an increase of 6,437,860 kronen (£268,244).

Austria-Hungary.

The principal items of the Ordinary Budget are as follows:—

	Kronen.	£ s.
Pay of officers, etc.	5,708,420 =	(237,851 0)
Pay of petty officers and seamen, with clothing ...	5,030,000	(209,583 0)
Land service	2,532,590	(105,525 0)
Sea „	6,787,010	(282,792 0
Establishments:—		
Hydrographical Office and Naval Library	101,850	(4,244 0)
Naval Academy	279,620	(11,651 0)
„ lower-grade schools	6,190	(258 0)
„ hospitals	320,380	(13,349 0)
Maintenance of the Fleet:—		
Dockyards, repairs, and *matériel*	10,717,150	(446,548 0)
New Ships and Machinery:—		
Battle-ship I. *Radetsky*, 14,500 tons	6,000,000	(250,000 0)
„ II. *Erzherzog Franz Ferdinand*, 14,500 tons	3,000,000	(125,000 0)
„ III. *Zrinyi* 14,500 tons	2,000,000	(83,333 0)
Second-class cruiser Ersatz *Zara*, 3,500 tons	2,000,000	(83,333 0)
12 Torpedo Boats, 100 tons	1,000,000	(41,667 0)
Ordnance	9,526,000	(396,916 0)
Miscellaneous Expenses	4,359,340	(181,640 0)
Apparent total	59,368,550	(2,473,690 0)
Certain deductions	381,240	(15,885 0)
Real total	58,987,310	(2,457,805 0)

The following are the principal items of the Extraordinary Estimates:—

Shore Establishments, Provision of Charts, etc. ...	118,050	(4,919 0)

Extraordinary Expenditure:—

	Kronen.	£ s.
Maintenance and Repair of Fleet, Provision for Floating Dock, etc.	2,100,000	(87,500 0)
Guns, Small Arms, etc.	700,000	(29,166 0)
New Establishments Afloat and Ashore	1,202,500	(50,104 0)
Miscellaneous	330,000	(13,750 0)
Total	4,450,550	(185,439 0)

—*Budget der K. u. K. Kriegsmarine für das Jahr, 1909.*

New Fleet Programme.—Count Montecuccoli, the Head of the Navy, has laid before the Delegations a new Navy Bill, covering a period of the next twenty years, with a view of making the construction of the new fleet, with the necessary credits required, independent of political parties. The base of the new law will be the provision of 16 battleships and 4 armoured cruisers of large displacement.

Austria-Hungary.

The building programme for the next four years provides for the construction of four 19,000-ton battleships, three small cruisers of the *Admiral Spaun* class, one torpedo ship and a torpedo destroyer to replace the recently lost *Hussar,* with two Danube monitors and some torpedo boats, the number of which has not yet been settled. The money required for carrying through this programme and the completion of the ships now in hand amounts to 356 million marks (£17,800,000), which will be provided partly by an extraordinary Naval Credit and partly by the ordinary Naval Estimates, which will be raised from 50 million marks (£2,500,000) to 60 or 70 million marks (£3,000,000 or £3,500,000).

Launches.—On the 5th ult., in the presence of the Archduke Francis Ferdinand, the Heir Apparent, was launched from the yard of the Stabilimento Tecnico at Trieste the new first-class battleship *Radetsky,* the second of the three ships of the *Erzherzog Franz Ferdinand* class to take the water. Her dimensions are as follows: Displacement, 14,500 tons; length on water-line, 451 feet; beam, 80 feet; mean draught, 26 feet 7 inches. The total weight of the armour will be about 3,070 tons. Her two engines of the vertical four-cylinder triple-expansion type are to develop 20,000-I.H.P., giving a speed of 20·5 knots, with 133 revolutions. Steam is supplied by 12 Yarrow water-tube boilers, with Howden's appliance for forced draught.

The armament will consist of four 12-inch 45-calibre guns, with a secondary battery of eight 9·4-inch guns in pairs in four turrets, twenty 3·9-inch Q.F. guns, sixteen in central battery, four in upper deck battery, six smaller Q.F. and machine guns and three submerged 18-inch torpedo tubes.

Submarine "A6," built by the Whitehead firm at Fiume, was launched on the 12th of June. "A5" and "A6" have been making diving trials since the beginning of July at Fiume. "A7" is still on the stocks. She is to have when submerged a speed of 11 knots.—*Marine Rundschau.*

France. The following are the principal promotions and appointments which have been made: Vice-Admiral—L. R. G. De Marolles to be Commander-in-Chief of the 2nd *Arrondissement Maritime* (Brest). Rear-Admirals—N. Kiésel to be Vice-Admiral; L. J. Berryer to Command of the 3rd Division of the Mediterranean Squadron. Capitaines de Vaisseau—M. G. Hautefeuille, L. H. Dufaure de Lajarte to be Rear-Admirals; M. Morin to "Gaulois"; E. M. Barthes to "Tourville" and Command of Gunnery School. Capitaines de Frégate—J. B. Baude, P. L. Simon, A. J. Le Fournier to be Capitaines de Vaisseau; E. L. Martinie to "Calédonien"; P. C. Levreux to Command of Fixed Defences at Cherbourg; M. E. Tirard to "Durandal" and Command of 2nd Torpedo and Submarine Channel Flotilla.—*Journal Officiel de la République Française.*

Vice-Admiral Bouè de Lapeyrère, Commander-in-Chief at Brest, has been appointed Minister of Marine, in which office he succeeds M. Picard. In selecting a distinguished Admiral from the Active List to fill this important appointment, M. Briand, the new Prime Minister, has reverted to the custom which formerly governed the appointment of Minister of Marine.

France.

Vice-Admiral Kiésel has been promoted to that rank only just in time to save him from retirement. Having been born on the 8th August, 1847, he must have retired on reaching the age of 62 years, but his promotion to Vice-Admiral gives him another three years on the active list. He joined the Navy in 1864, and has only recently given up the command of the 3rd Division of the Mediterranean Fleet; he is very popular, and his promotion has given great satisfaction in the Service.

Rear-Admiral Hautefeuille had applied quite lately to be placed on the retired list, but instead of his request being granted, he was promoted to Rear-Admiral. He was born on the 1st of January, 1852, and is consequently in his 58th year. As a midshipman in 1873 he made the Tonkin campaign, under Captain Garnier, in which he much distinguished himself, and for his conduct in the taking of Nam Dinh he received the Legion of Honour. His last command as a captain was as Senior Officer in Command of the Naval Division in the Pacific.

Launches.—Two new destroyers have recently been launched, the *Chasseur* at Havre and the *Voltigueur* at Nantes. The dimensions of the *Voltigueur* are: displacement, 444 tons; length 65m. 60 (215 feet); breadth, 6m. 82 (20 feet); H.P., 8,000; estimated speed, 28 knots. She is to be armed with six 65-mm. (2·5-inch) Q.F. guns and two torpedo tubes, and her complement is fixed at 4 officers and 58 men. Her cost is 2,169,115 francs (£86,765). The dimensions of the *Chasseur* are as follows: —Displacement, 447 tons; length, 64 metres 20 centimetres (210 feet); beam, 6 metres 54 centimetres (21 feet); draught of water, 2 metres 36 centimetres (7 feet). She is fitted with turbine engines to develop 7,200-H.P., driving three propellers, and her estimated speed is 28 knots. Her armament consists of six 65 mm. (2·55 inches) Q.F. guns and two torpedo tubes; the complement is fixed at 4 officers and 58 men; and her total cost is 2,125,381 francs (£85,015).

Trials of the "Ernest Renan."—The armoured cruiser *Ernest Renan* has recently completed her trials. She carried out her first full-power trial of 10 hours' duration on 13th March. The H.P. realised was 37,100, instead of 36,000, and the speed 24 instead of 23 knots; there was also a reduction in the estimated consumption of coal of 777 grammes per H.P. This is the first time a vessel of this power has undergone a full-power trial of so long a duration. She afterwards carried out a three hours' full-power trial, using only three quarters of her boilers, the other quarter being supposed to be disabled by damage in action. On this trial she realised 36,200-H.P., which was considered very satisfactory. She was commissioned in June last for service in the Cruiser Division of the Mediterranean Fleet. Between the 21st and 25th of that month she carried out successfully her four days' sea commissioned trial, having made the run from Toulon to Brest, in spite of bad weather and a heavy sea, in 89 hours, maintaining a speed of from 21 to 18·5 knots, this last speed having been easily maintained when using only half the boilers. Her engines and boilers worked most satisfactorily, and she has proved herself the fastest cruiser in the French Navy. At full speed under natural draught, with a coal consumption from 70 to 75 kg. (154-165 lbs.) per square metre of grate surface, she can maintain a speed of 22 knots as long as her coal lasts, without any special fatigue being entailed on

France.

the stokers. At 10 knots speed she has a radius of action of 12,000 miles. The *Ernest Renan* was built by the *Societe des Chantiers et Ateliers de Saint Nazaire*, and is the last of the five armoured cruisers of the 1900 programme to be completed. She was intended to have the same dimensions as the other four, *Jules Ferry*, *Léon Gambetta*, *Victor Hugo*, and *Jules Michelet*, but her design was afterwards altered with a view to giving her increased speed, and this places her now among a later class of very fast cruisers, of which the *Waldeck-Rousseau* and *Edgar-Quinet* are examples. Her dimensions are : displacement, 13,000 tons; length, 157 m. (515 feet); breadth, 27m. 36 (39 feet); and she has for protection a belt of cemented steel 52 mm. (2 inches) thick, two armoured decks, and a cellular transverse bulkhead. Her main armament is four 19-cm. (7·6-inch) guns in two turrets on the middle line, one forward and aft, and she has also twelve 16-cm. (6·48-inch) guns, of which eight are in lateral turrets and four in casemates; she also carries twenty-one 47-mm. (1·85-inch) Q.F. guns, and two of 37-mm (1·45-inch), and she has two submerged torpedo tubes.

Her main engines are three in number of the 4-cylinder triple-expansion type, working three propellers, and at 136 revolutions develop 36,000-H.P., and there are 42 boilers of the Niclausse pattern. Her complement is fixed at 674 officers and men.

Experimental Firing at the "Jena."—A programme of experimental firing at the hull of the disabled battleship *Jena* has been approved by the Minister of Marine, and although the necessary credits have not yet been voted, the experiments will take place as soon as possible. The object is to test the power and efficiency of the service projectile as supplied to the Navy, and the experiments will be divided into two series, one of long-distance firing, to verify the power of the projectile, and the other at short ranges, to ascertain the effects on the *matériel* of the battleship, and on the *personnel* to be represented by animals. The ballistic formulæ used in France are those of Jacob de Marres, and one question to be determined is the accuracy of these formulæ. Different parts of the hull will be attacked, and the firing will be at various angles.

The Policy of M. Picard.—M. Picard's policy, who until the recent change of Ministry was Minister of Marine, fully appreciated as it was by many, had, nevertheless, its detractors, who opposed it because it did not appear to respond to the desire of the nation for a stronger Navy equal to that of our neighbours.

Many persons evidently concluded that M. Picard would proceed with the elaboration of a vast programme equal to that of Germany, which would definitely fix the constitution of our fleet, the number of ships to be built within a given period, the effectives to be provided by different dates, and the necessary increase to the Budget to carry it all out.

When M. Clemenceau invited M. Picard to join his Government as Minister of Marine, no one supposed that the Prime Minister expected him to play the part of a second "Colbert," but knowing M. Picard's administrative talent, his reputation for and his power of work, M. Clemenceau asked him to give all his energies to the Navy, to make it, in popular language, "*marcher*." M. Picard accepted, and set himself to work to find out the causes which have, so to speak, "hove to" the Navy,

France.

and he has reasoned the matter out in the simplest way. He said to himself, as the *Lutin* was not properly overhauled before her last dive, because the dock she was in was wanted for some other purpose, our docks are, therefore, not numerous enough; if the *Danton* class of battleships are too long or too wide to enter certain of our docks, the entrances must be widened, and they must be made longer; if an Admiral (Admiral Germinet) has declared that the supplies of projectiles to our ships are not sufficient for a 3-hours' fight, the supplies must be increased; if there is any danger of the old powder blowing up our ships, new powder must be bought; if cast steel shells are not strong enough to stand the strain of the great initial velocities now in use, they must be replaced by another and stronger make of shell; if in a single cruise the *Gloire* has the misfortune to lose two anchors, our stock of spare anchors must be increased, etc. Thus in estimating for these different wants the Minister was able to arrive at the sum required for providing the necessary docks, the supplies of powder, projectiles that will not burst prematurely, auxiliary vessels for the fleets, etc., to enable him to guarantee the proper working of all the different departments of the Navy, and the proposals which he laid before the Chamber, before his resignation, were drawn up with this view.—*La Vie Maritime, Le Moniteur de la Flotte*, and *Le Temps*.

United States.

Report of Bureau of Navigation. — In his annual report Rear-Admiral John E. Pillsbury, Chief of the Bureau of Navigation, lays special stress on the fact that we have no defended naval base in either the American insular possessions in the East or in the Caribbean Sea, the probable theatres of action in any war in which the Navy might be called on to engage. So important is this question believed to be, that in Admiral Pillsbury's opinion all appropriations for new improvements at naval stations or for the defence of the coast ports should give way to the establishment and defence of naval bases in the Philippines, at Pearl Harbour and at Guantanamo, for these bases, he says, are vital to success in war.

There is a renewal in this report of the previous recommendation that the grade of vice-admiral should be revived. It is proposed that five officers of this rank be authorised. Admiral Pillsbury thinks it due the Service and the country that the Commanders-in-Chief of the Atlantic and Pacific Fleets should have at least this rank.

Remedy for the shortage of officers with which the Navy contends is sought in a recommendation that the law authorising the appointment of two midshipmen by each Senator, Representative, and Delegate in Congress during a period of four years be now extended for two years additional.

In order that the difficulty of having officers arrive at command of flag rank at an early age may be obviated, it is recommended that the present law be changed, and that the minimum age of candidates for Annapolis be fifteen years, the law to be effective from 1st July, 1910.

An appropriation of 5,000 dollars by Congress for prizes to be awarded under the steaming competition of the fleet is recommended. Upon the question of target practice, the report says :—"The target practice of the Atlantic Fleet in Magdalena Bay was of special interest, owing to the fact that many officers had been of the opinion that training in port was essential to efficiency, but it was clearly shown by the excellent records made by the main battery guns of the battle-ships that a high degree of efficiency can be obtained by sea training alone. Owing to the cruise of the battle-ship fleet, none of the men of that fleet were able to hold small-arms practice, but of the other vessels of the Navy, 6,256 officers and men completed the regular course of firing; 989 qualified as marksmen, 392 qualified as sharpshooters, and 124 as expert riflemen."

Recommendation is made that 274 acres of ground be purchased at Annapolis to be used as a rifle range for the Naval Academy. Contemplated sale will soon demand the abandonment of the present range.

Under flag and commanding officers is the following :—"The tactical and disciplinary efficiency of the fleet as a whole depends upon the Commander-in-Chief, and frequent changes in the chief command are to be discouraged. While it is desirable that officers should arrive at command and flag rank when still relatively young, youth is not everything, for it must be combined with sea experience in order to be of the greatest value to the Service and to the country."

Twelve promotions of warrant officers to the grade of ensign are authorised each year, but of the three presenting themselves during the last twelve months none was able to qualify.—*Army and Navy Journal.*

Bids for Battleships.—Bids were opened at the Navy Department at the end of last year for the construction of the battleship *Utah* and for supplying the machinery for the *Florida*, which is already under construction at the New York Yard. The lowest bidder for the *Utah* was the New York Shipbuilding Company, of Camden, N.J., at 3,946,000 dollars for a 20¾-knot ship. A bid for the construction of a 21-knot vessel was submitted by the Fore River Company, of Quincy, Mass., at 4,440,000 dollars, the lowest bid for this class. The *Utah* is to be a sister ship of the *Florida*, and is to be of about 21,825 tons displacement. For the machinery for the *Florida*, the Newport News Shipbuilding and Drydock Company was the lowest bidder at 1,517,000 dollars.

Bids for the battle-ships were opened under three classes. Under the first class, for hull and turbine machinery, in accordance with Government plans, the bidders were: New York Shipbuilding Company, 3,946,000 dollars; the Newport News Shipbuilding and Drydock Company, 4,180,000 dollars, both for a 20¾-knot vessel, to be delivered in thirty-two months; William Cramp & Sons, 4,330,000 dollars, same speed, to be delivered in thirty-five months.

For class two, for hull and reciprocating machinery, Government plans, the bidders were : The Newport News Shipbuilding and Drydock Company, 4,150,000 dollars, 20¾ knots speed, thirty-two months delivery; William Cramp & Sons, 4,270,000 dollars, same speed, delivery thirty-five months.

Class three, hull and equipment, Government plans; machinery certain specified type in accordance with bidder's plans. Under this class the Fore River Shipbuilding Company submitted eight bids, all for the Curtis turbine type of machinery. Four of these bids were for a 20¾-knot vessel, delivery thirty-two months, the lowest being 4,393,000 dollars. The other four bids were for a 21-knot vessel, the lowest being 4,440,000 dollars. Other bids under this class were the Newport News Shipbuilding and Drydock Company, Parsons' turbine type of machinery 20¾ knots speed, 4,100,000 dollars, and the same company for reciprocating machinery with Mosher boilers, 20¾ knots speed, 4,070,000 dollars; William Cramp & Sons, Cramp-Zoelly type of machinery, 21 knots speed, 4,450,000 dollars.

Following were the bids in detail for furnishing the machinery for the *Florida*: Newport News Shipbuilding and Drydock Company, Government plans, 1,715,000 dollars, vessel to have speed of 20¾ knots; same company, Parsons' turbine type machinery, Mosher boilers, 1,517,000 dollars, same speed; same company, reciprocating type machinery, bidder's plans, 1,588,000 dollars, same speed; same company, reciprocating type of machinery, Mosher boilers, 1,542,000 dollars, same speed.

The Fore River Company did not bid on this proposition, but submitted bids covering individual items of material required.

Three companies—the Midvale, the Carnegie, and the Bethlehem Steel—bid on proposals for steel armour plates for the two ships. The Midvale Company bid for Class A, 420 dollars; Class B, 405 dollars; Class C, 462 dollars, and Class D, 512 dollars. The Carnegie Company's bids for the same classes were 420 dollars, 415 dollars, 455 dollars, and 600 dollars respectively, and the Bethlehem Company's bids as follows for the respective classes: 420 dollars, 408 dollars, 470 dollars, and 508 dollars.—*Army and Navy Journal.*

Launch of the "North Dakota" and "Delaware."—Want of space has prevented us from noticing earlier the launch of the new first-class battleships *North Dakota* and *Delaware*. The *North Dakota*, the first turbine battleship to be built for the U.S. Navy, was launched at Quincy, Mass., on 10th November last, the huge vessel taking the water without any hitch.

The principal dimensions of the vessel are: Length, 510 feet on the water line, 518 feet 9 inches length over all; extreme beam to outside armour, 85 feet 2⅝ inches; trial draught, 26 feet 10 inches, with a displacement of 20,000 tons. Her armament will consist of ten 12-inch breech-loading rifles, fourteen 5-inch Q.F. guns, four 3-inch saluting guns, four 1-pounder semi-automatic guns, two 3-pounder field pieces, two machine guns, calibre ·30; two submerged torpedo-tubes. The arrangement of the main battery will make it doubly effective, mounted as it will be in five huge turrets along the centre line of the ship. Because of this the big guns can be fired to either broadside. Two of the big guns being placed higher than the others will also permit firing over the other turrets.

She will be fitted with two lattice-work masts or towers in lieu of the usual masts. The armour is in three belts, the chief of them being eleven inches thick and eight feet wide; the second seven feet three inches wide and an inch thinner, and the top belt of 5-inch steel running to the main deck. The upper plate is placed ten feet above normal water line and eight or more feet above the deep-load water line.

The cost of the hull and machinery is figured at 4,337,000 dollars, and the vessel is about 60 per cent. completed. The vessel will have a bunker capacity of 2,500 tons and a complement of 55 officers and 878 men. At the fourth-hour trial trip the *North Dakota* must maintain by contract a speed of twenty-one knots an hour. The ship will have twelve Babcock &

Wilcox water-tube boilers, with a combined force of 25,000-H.P. These boilers can be fired with both coal and oil.

The battleship *Delaware* was successfully launched at Newport News, Va., on the 6th February. The *Delaware* is 510 feet in length on load water-line, 85 feet 2 inches in breadth, and her mean draught to bottom of keel at trial displacement about 27 feet. Her coal bunker capacity is 2,500 tons, which is sufficient to send her at a 10-knot speed a distance of 6,720 knots, or twenty-eight days' steaming. Her top speed will be twenty-one knots an hour. Provison is also made for the stowage of a large amount of oil fuel. She will have triple-expansion reciprocating engines and will require 900 men to man her. Her armament will consist of a main battery of ten 12-inch breech-loading rifles, and her secondary battery will be fourteen 5-inch rapid-fire guns, four 3-pounder saluting guns, four 1-pounder semi-automatic guns, two 3-inch field pieces, and two machine guns of ·30 calibre. She has two submerged torpedo-tubes.

The *Delaware* will have a displacement on trial of 20,000 tons, or 2,100 tons greater than the British Dreadnought and 750 tons greater than Great Britain's latest vessels of that type.

The hull is protected by a water-line belt of armour 8 feet in width, whose maximum thickness is 11 inches. This belt gives effective protection to the boilers, machinery and magazine spaces. The side above the main armour belt is protected by armour 7 feet 3 inches wide and of a maximum thickness of 10 inches. Above the main casemate armour amidships, the side is protected by armour of 5 inches thickness, which affords protection to the funnels, the major portion of the secondary batteries of 5-inch guns and the hull structure.

A new feature of the *Delaware* will be the two "skeleton" masts, which are to replace the present steel tube masts with fighting tops, now in use on other vessels.

The plans for the *Delaware* were prepared by the Board of Construction in competition with plans submitted by various naval architects and shipbuilding companies and submitted to a special board, under the Presidency of the former Assistant Secretary of the Navy, T. H. Newberry, and later approved by Congress. The contract for the *Delaware* was placed 6th August, 1907, at a price of 3,987,000 dollars, to be built in accordance with the Department's design for both hull and reciprocating machinery. Her keel was laid 11th November, 1907.—*United States Naval Institute Proceedings*, and *Army and Navy Journal.*

The following is the percentage of completion on 1st May, 1909, of vessels under construction for the United States Navy : Battle-ships—*South Carolina,* 90·0; *Michigan,* 97·4; *Delaware,* 77·9; *North Dakota,* 81·5; *Florida,* 11·9; *Utah,* 14·9; Torpedo boat destroyers—*Smith,* 57·5; *Lamson,* 56·2; *Preston,* 52; *Flusser,* 33; *Reid,* 31·6; *Paulding, Drayton,* and *Roe,* 0; *Terry, Perkins,* and *Sterrett,* no report; *McCall* and *Burrows,* 0; *Warrington* and *Mayrant,* no report. Submarine torpedo-boats—*Stingray,* 62·3; *Tarpon,* 60·3; *Bonita,* 57·8; *Snapper,* 56·5; *Norwhal,* 52·3; *Grayling,* 52; *Salmon,* 51·3. Colliers—*Vestal,* 97·6; *Prometheus,* 87·8. Tug-boats—*Patapsco,* 81; *Patuxent,* 95.

MILITARY NOTES.

Home. The following are the principal appointments which have been made:—

General—Sir Frederick W. E. F. Forestier-Walker, G.C.M.G., K.C.B., Governor and Commander-in-Chief, Gibraltar, to be also General Officer Commanding-in-Chief and High Commissioner in the Mediterranean (temporarily).

Lieut.-General—Sir Leslie Rundle, K.C.B., K.C.M.G., D.S.O., to be Governor and Commander-in-Chief, Malta.

Major-Generals—F. W. Benson, C.B., to be Colonel 21st (Empress of India's) Lancers; R. L. H. Curteis to be Colonel of the Bedfordshire Regiment; J. T. Dalyell (Hon. Lieut.-General) to be Colonel of the Royal Scots Fusiliers.

Colonels—N. B. Inglefield, D.S.O., to Command South Irish Coast Defences, with temporary rank of Brigadier-General; F. S. Inglefield, C.B., D.S.O., to Command 12th Infantry Brigade (Eastern Command); H. Pipon, C.B. (Hon. Major-General) to be Major of the Tower of London; J. W. Allen, C.B., to Command the troops in Ceylon, with temporary rank of Brigadier-General; Montagu C. Curry, D.S.O., to Command No. 4 District (Western Command); A. H. Morris, C.M.G., D.S.O., to be Commandant Duke of York's Military School.

Lieut.-Colonel—G. C. Nugent, M.V.O., to Command Irish Guards and Regimental District, with temporary rank of Colonel.

Medical Department of the Army.—Surgeon-General W. L. Gubbins, C.B., M.V.O., to be Director-General Army Medical Service.

Indian Army.—Major-General—R. L. Payne, C.B., D.S.O., to Command Nowshera Infantry Brigade, 1st (Peshawar) Division.

Colonels—F. W. P. Angelo to Command Nowshera Cavalry Brigade, 1st (Peshawar) Division, with temporary rank of Brigadier-General; A. F. Hogge, C.B., to be Colonel on the Staff, to Command Ferozepore Brigade, 3rd (Lahore) Division, with temporary rank of Brigadier-General.

Review of the Lancashire Territorial Divisions and Presentation of Colours by H.M. the King.—On the afternoon of Monday, 5th July, the King reviewed the West Lancashire Territorial Division in Lord Derby's beautiful park at Knowsley, and presented colours to the different units. The division, which was commanded by Major-General E. C. Bethune, C.B., was drawn up on the parade ground in two lines. On the right of the first line were the Lancashire Hussars Yeomanry; then came the four Royal Field Artillery brigades and the heavy brigade. Next in the alignment was the West Lancashire Royal Engineer Division; then came the North Lancashire Infantry Brigade and the Liverpool Brigade. The South Lancashire Brigade was formed at right angles to the left of the lines, as the limits of the parade ground did not permit of its forming on the same alignment as the rest of the division. The second line was formed from the right as follows: Ammunition columns, West Lancashire supply and transport columns, the West and East Lancashire Royal Garrison Artillery, the West Lancashire Royal Army Medical Corps, Lancashire and

Cheshire Royal Garrison Artillery, the Lancashire Fortress Royal Engineers, the Western Telegraph Companies Royal Engineers, and the 1st Western General Hospital. In a third line were the Cadet Corps.

The Royal procession left Knowsley Hall at ten minutes to four, escorted by two troops of the 1st Life Guards, the guard of honour at the Hall being furnished by the Naval Volunteers. At intervals down the avenue were drawn up between the tree trunks groups of Boy Scouts, the route from the avenue to the point where the Royal carriage first came in view of the parade was lined by the Liverpool detachment of the King's Colonial Yeomanry, while the Liverpool Crimean and Mutiny veterans were also drawn up to salute His Majesty. After passing down the line their Majesties proceeded to the dais which had been erected, and the ceremony of the consecration and presentation of the Colours was proceeded with, the Consecration Service being performed by the Bishop of Liverpool, assisted by the Rev. A. Connell, Moderator of the Presbytery. The battalions which received Colours were the 4th and 5th Battalions the King's Own Royal Lancaster Regiment, the 4th and 5th Battalions the Loyal North Lancashire Regiment, the 7th and 9th Battalions the King's Liverpool Regiment, the 10th (Scottish) Battalion the King's Liverpool Regiment, and the 4th Battalion the Prince of Wales's Volunteers South Lancashire Regiment. After the ceremony of the consecration and presentation was over, the West Lancashire Division marched past, which was a marked success, the troops, particularly the infantry, acquitting themselves most creditably. After the march past was over, the West Lancashire General Hospital *personnel*, complete with its higher staff and nursing sisterhood, lined up in front of the Royal dais, and the king walked along the line, stopping to speak a few words to some of the officers and nurses present. With this inspection this memorable review in the history of the new Territorial Army came to an end, their Majesties returning to Knowsley Hall for the night.

On the following day the King reviewed the East Lancashire Division in Worsley Park, and presented Colours to various units of the Division. Their Majesties arrived on the ground about four, after having lunched at Worsley Hall, the seat of the Earl of Ellesmere. The Division was drawn up in two lines under the command of Brigadier-General W. Fry. Owing to the want of breadth the cavalry and artillery could not take the right of the line. The first line was therefore formed by the three infantry brigades in line of quarter column in the following order : The Lancashire Fusiliers Brigade, the East Lancashire Brigade, and the Manchester Brigade. The second line was formed by the Duke of Lancaster's Own Yeomanry in mass, the 1st, 2nd, 3rd, and 4th Brigades R.F.A., in line of quarter column at half interval, with ammunition column *personnel* in rear ; the East Lancashire Divisional R.E. in quarter column, transport and supply column with wagons in rear, and the R.A.M.C. Field Ambulance in column of field ambulance. The 1st Cadet Battalion the Manchester Regiment was also in the parade. A few minutes after the appointed time the Royal procession arrived from Worsley Hall, the Royal carriage being preceded by a Sovereign's escort of the 1st Life Guards. As the Royal carriage wheeled into the saluting base, the Royal salute was given. The procession then moved towards the right of the line, where it was joined by Brigadier-General Fry and staff and Lieut.-General Sir C. J. Burnett, G.O.C. Western Command, and staff. The King then inspected both lines of the parade.

The picturesque ceremony of consecrating and presenting Colours to units of the division was then proceeded with. The units to receive this honour at the hands of their Sovereign were the Duke of Lancaster's Own Yeomanry (a Guidon), the 5th, 6th, 7th, and 8th Battalions Lancashire Fusiliers, the 4th and 5th Battalions the East Lancashire Regiment, and the 5th, 6th, 7th, 8th, 9th, and 10th Battalions the Manchester Regiment. A new procedure in the presentation was adopted on this occasion. The colour parties consisted only of majors, and the usual colour guards were dispensed with. The parties were formed in two lines, forming a lane towards the Royal Pavilion, and the drums were piled between them. The Bishop of Manchester took his stand before the drums. The King and Queen, having completed their inspection of the line, were driven to the Pavilion, on a platform at the foot of which the King then took his position. The Bishop then proceeded with the consecration, which over, the King by touching each emblem confided it to the trust and keeping of its unit, the representative officers receiving them on bended knee.

After the Colours had been presented, the East Lancashire Division marched past, the Duke of Lancaster's Own Yeomanry leading. They came by in column of troops. The four brigades of Field Artillery went by in battery column. The ceremony of the review was brought to a close by the presentation to their Majesties of the chairman and the members of the East Lancashire Association and the officers commanding brigades and units.

Resignation of the Duke of Connaught.—Field-Marshal H.R.H. the Duke of Connaught has resigned his appointment as Field-Marshal Commanding-in-Chief and High Commissioner in the Mediterranean.

The announcement of the Duke's resignation, foreshadowing as it does his life-long connection with the Army, will be received with genuine regret by soldiers of all ranks. His Royal Highness entered the Royal Engineers, after passing through the Military Academy at Woolwich, as long ago as 1868, being transferred some five months later to the Royal Artillery. Eighteen months after he joined the Rifle Brigade, of which to-day he is the Colonel-in-Chief, which was followed by a period of service in the 7th Hussars. He next served as Brigade Major of the Cavalry Brigade at Aldershot, and as Assistant-Adjutant-General at Gibraltar, returning to Aldershot in 1880 as a Brigadier-General.

Two years later he proceeded to Egypt in command of the 1st Brigade (Guards), serving through the war of 1882, and being present at the battle of Tel-el-Kebir. For his services he was mentioned in despatches, received the thanks of both Houses of Parliament, and was awarded the C.B. Returning to Aldershot, he was shortly afterwards appointed as a Major-General to command a division in Bengal, and three years later became Commander-in-Chief of the Bombay Army—an appointment he held until March, 1890. After his return to England he held the command at Portsmouth for three years, when he was transferred to the command of the troops at Aldershot, where he remained for five years. In January, 1900, he succeeded Lord Roberts as Commander-in-Chief in Ireland, it

Home.

being found, much to his disappointment, impossible to employ him in South Africa. On the 26th of June, 1902, he was promoted to Field-Marshal, and in 1904, on the reorganisation of the War Office and Head-quarter Staff, he was selected to hold the newly-created appointment of Inspector-General of the Forces and President of the Selection Board, which he held until the winter of 1907, when he took up the post of Field-Marshal Commanding-in-Chief and High Commissioner in the Mediterranean, which he has now resigned, to the great regret of the residents of Malta, with whom both he and the Duchess are immensely popular.

General Sir F. W. E. F. Forestier-Walker, the Governor of Gibraltar, has been appointed to take over the duties temporarily in succession to the Duke of Connaught; but it is officially announced that the appointment has been offered to and accepted by Lord Kitchener, who is to be promoted to Field-Marshal on vacating the Chief Command in India in October next. Before taking up his new appointment, however, Lord Kitchener proceeds to Japan to represent the King and the Army at the Grand Imperial Manœuvres in November. From there, at the request of the Governments of Australia and New Zealand, he will visit the Commonwealth and Dominion to inspect their troops and to advise as to the best way of giving effect to the proposals for the development of their military forces which are being discussed at the Imperial Conference now sitting in London. Afterwards he will come home and take up his new command, to which is added a seat on the Committee of Imperial Defence. In view of new development in organisation, the Mediterranean Command assumes increased importance, and it will be taken up by Lord Kitchener with the object of giving it its proper place in the general scheme of Imperial defence. —*Précis from Times.*

New Compass for Night Work.—Field Service Regulations, Part I., just published, directs in Section 133 that any change of direction necessary in guiding columns by night in open country should be noted by compass bearings. Now the dial of the Service prismatic compass, Mark V., which shows the bearings perfectly by day, is not illuminated sufficiently by the luminous paint with which it is covered to enable one to read the figures and fine divisions showing the bearing by night. The "Cavalry Journal" for July, however, has apparently discovered a solution of the difficulty. Major C. W. Somerset, Indian Army, has recently invented and patented an electrically-lighted prismatic compass which can be read as accurately by night as by day. It is called the "Primus." The advantage of the instrument is that the same compass can be used both by day and night, and further, that no light is emitted from the compass box to be seen by others.

Austria-Hungary.

The Army Estimates for 1909.—In last month's Notes we gave a brief *résumé* of the Army Estimates for the current year which showed the total Budgetary effectives as voted to be: 16,842 officers, a decrease of 29 as compared with 1908; 4,919 officials, an increase of 75; 977 subaltern employés, an increase of 29; 18,162 cadets and re-engaged non-commissioned officers, a decrease of 405 of the non-commissioned officers; non-commissioned officers and men, 271,432, an increase of 272. Horses, State, 62,279, a decrease of 584; to officers, 10,455, a decrease of 216. To these details the following must be added :—

Austria-Hungary.

1. In addition must be counted 5,660 pupils at the different military schools (the same number as in 1908).

2. In addition must be counted 11,172 horses on civil service (the same number as in 1908).

3. It is necessary, in order to arrive at the total Budgetary strength of the Common Army, to add to these figures the effectives of the Bosnian troops, paid out of the Bosnian-Herzegovinian Budget, which amount in round numbers to 360 officers, 34 officials, 6,700 non-commissioned officers and men, 40 State horses, and 140 officers' horses.

The numbers of the Reservists and *Ersatz*-Reservists called out for instruction are the same as for previous years :—

61,400	*Ersatz*-Reservists called out for first time for...	8 weeks.
172,000	Reservists and *Ersatz*-Reservists called out for a period of instruction of	13 days
92,250		17 ,,
8,400		25 ,,
5,150		28 ,,
4,900	Officers of the Reserve called out for a period of instruction of	28 ,,
8,400	Reserve Horses for	21 ,,

It will be seen that the Budgetary effectives are almost the same as those for 1908, and it could hardly be otherwise, as the annual contingent remains unchangeable.

However, one must notice :—

1. A sufficiently enough marked decrease in the number of the non-commissioned officers who re-engage, added to that which the Budget of 1908 already showed. This decrease is unfortunate at a time when, by reason of the introduction of the two-years' service, the military authorities are trying to increase the number of non-commissioned officers of this category. It proves the ineffectiveness of the measures adopted to this end up to the present.

2. Certain modifications in the distribution of the effectives of the army. Already in 1908, in order to meet the reorganisation of the artillery and the increase in the navy, it was necessary to weaken by almost 5,000 (to be exact, 4,708) men the strength of the infantry (line and chasseurs), in the proportion of 48 men per the 4th battalion of each regiment. The reorganisation of the artillery is completed, but as the strengthening of the navy is still continuing, the infantry still loses nearly a thousand men (to be exact, 930) in the proportion of 8 per each 4th battalion (Ordinary Budget). On the other hand, under the Extraordinary Budget the number of battalions with increased effective is raised to 25 instead of 20 (an increase of some 719 men in all). In fine, the round effective strength of the infantry remains almost the same as in 1908, but that of the 4th battalions of the regiments at home is appreciably weakened (14 men per company). The infantry has in addition to meet from its own resources in men the formation of new machine gun detachments, which consequently will still more weaken the companies.

The effectives of the other arms undergo no modification, save those resulting from the attachment to the field artillery of some batteries of heavy howitzers, formerly attached to the fortress artillery.

There is no essential modification in the organisation or working of the different branches and services. Out of the 16 million francs (£200,000) increase which the Ordinary Budget shows in round numbers, two millions

(£25,000) is necessitated by the increased cost of food and other prime necessaries of life, for several years past the cost of living has been steadily rising in Austria-Hungary; a further 9 millions (£1,150,000) is absorbed by an increase in the pay of officers and cadets, and 3½ millions (£40,000) in the improvement of the material condition of the soldiers.—*Revue Militaire des Armées Etrangères.*

The Grand Manœuvres, 1909.—According to present arrangements, the Grand Manœuvres, at which the German Emperor will be present, will take place between the 8th and 11th of September in the Trebitch-Iglau-Gross-Meseritch region (between Bohemia and Moravia, south-east of Iglau) between the Ist Army Corps (Cracow), the IInd Army Corps (Vienna), and part of the IXth Army Corps (Leitmeritz).

Owing to the 47th Division being retained at Vienna, the Ist and IInd Army Corps will have three divisions, one of which will be composed of *Landwehr* and one division of cavalry. Of the IXth Corps, one division of infantry—the 10th (Josephstadt)—takes part in the manœuvres.

There will be present altogether a total of 100 battalions of infantry, 60 squadrons of cavalry, 54 batteries of artillery, and 6 pioneer companies. The Army Headquarters will be fixed at the Chateau of Count Harrach, at Gross-Meseritch. The manœuvres will last four days, terminating on the 11th of September.

To each division will be attached a detachment of four machine guns and a cyclist detachment, and each of the two opposing forces will have a detachment of field balloonists. Mechanical traction will be used exclusively for the victualling of the troops, and the Ist Army Corps will use field-kitchens.

The strength of the companies of infantry will be raised to 130, and the squadrons of cavalry to 140 men.

The manœuvres will be directed, as last year, by the Archduke Franz Ferdinand, the heir to the throne, who will have as his Chief of the Staff, General of Infantry Conrad von Höhyendorf, Chief of the General Staff of the Army.—*Bulletin de la Presse et de la Bibliographie Militaires.*

Bosnia-Herzegovina.—The Military Authorities have determined to transform Sarajevo into a strong fortress. The present enceinte will be retained to form a central starting point, which will be surrounded by a chain of forts to a distance of 7 kilometres (4 miles 615 yards). The new forts will be of the type employed by the Italians in their mountain fortifications. The present forts, in order to have a good field of fire, were isolated, and owing to their form of construction, were visible from afar. The new forts will be in principle and, as far as possible, excavated out of the rock.

A reduction is to be made in the effective strength of the XVth Army Corps stationed in Bosnia. From Sarajevo, the headquarters and two battalions of the infantry regiment No. 23 are to be transferred to Budapest, and one battalion to Rospovar; the 1st Battalion of the Infantry Regiment No. 7 moves from Gorazola to Grätz; the 2nd Battalion of the Infantry Regiment No. 14 from Mostar to Lienz; the 3rd Battalion of the Infantry Regiment No. 31 from Sarajevo to Trenezin; and the 4th Battalion of the Infantry Regiment No. 94 from Glidze to Reichenberg. On arrival at their garrisons these battalions will be reduced to a peace effective by the sending to their homes of the reservists. It is also

Austria-Hungary.

announced that very shortly five of the new battalions with their machine guns will be also withdrawn.

In consequence of these movements the XVth Corps will only consist of 52 battalions in place of 64, half of the reinforcements which were sent last December and March of this year being withdrawn.—*Revue Militaire des Armées Etrangères.*

Italy.

The Third Report of the Commission of Enquiry into the Army.—In this report the Commission treats of the general organisation of the Army. It is a document which has been favourably received by public opinion in Italy, is marked by the breadth of view shown by its authors, and it will certainly serve as the base of the coming proposals and discussions on the reorganisation of the Army. The following is a brief analysis of its principal conclusions :—

General.—The Commission considers that it is necessary to decentralise and above all simplify the administration of the Army, and also that retired officers should be employed as far as possible on duties where use can be made of their services (as professors, for example, in the military schools, or on duty at the Ministry of War and the military establishments as district officers, etc.), and so effect economies on their pensions.

General Organisation of the Army.—The Commission does not recommend any reduction in the number of army corps; such a measure would render difficult the rapid *encadrement* of the mobilised forces. It demands : 1. That all the commanders of army corps be called upon to take part in the work of the Council of the Army and the Superior Council of National Defence; 2. That the appointment of the commanding generals, instead of being sanctioned by a Royal Decree, should be simply notified by the Minister and renewed each year; 3. That the selection of the commanding generals should be recommended to the Government by a secret vote of the members of the Superior Promotion Commission; 4. That the staffs of the Army should be constituted even in time of peace.

Infantry.—The Commission has had under their consideration the weak effective strength of the companies during certain months of the year, when it falls to 50 or 60 men. It proposes to adopt a standing effective strength of 96 men and to introduce the following modifications into the organisation of the arm :—

	Present Organisation.	*Proposed Organisation.*
Infantry of the Line.	48 Brigades; 96 Regiments; 288 Battalions.	50 Brigades; 100 Regiments (with a machine-gun detachment per regiment); 300 Battalions.
Bersaglieri	12 Regiments; 36 Battalions.	6 Regiments (with machine-gun detachments); 18 Battalions.
Bersaglieri Cyclists.	12 Companies (comprised in the Regiments).	2 Regiments; 6 Battalions; 24 Companies.
Alpine Regiments.	7 Regiments; 22 Battalions; 75 Companies.	Without modification, but each battalion to receive a machine-gun detachment.

Italy.

The *Cadres* will be increased by 2 Chief Staff Officers, 400 captains (already on the list but supernumerary to establishment), and 550 lieutenants.

Cavalry.—It would be expedient to raise the effective strength of the squadron to 130 horses, but the number of squadrons should be reduced from 6 to 5. The number of regiments to be raised from 24 to 29, which will allow of a new division of independent cavalry being formed. The cavalry divisions should also be organised during peace.

Each regiment to be supplied with a machine gun detachment.

Artillery.—It is essential to separate the technical branch from the combatant artillery force. The Commission proposes the suppression of the *Artillery-Directions,* with the exception of the one at Plaisance for the maintenance of the siege artillery parks, and the separation of the field artillery train in order to make it an autonomous corps.

The field batteries ought to have on a peace footing at least 90 men, 60 horses, and 4 guns. It would be well to organise a battery in half at least of the regiments of artillery to serve as a nucleus for the constitution of the units of mobile Militia at the moment of mobilisation; and to create seven batteries which are wanting at the present time.

The Commission consider that the war strength of the battery should be six guns, and that some howitzer batteries should be substituted for gun batteries in the proportion of one to two batteries per army corps.

The horse artillery batteries to have four guns, and they could advantageously be supplied with lighter *matériel.*

The mountain batteries should remain with six guns, and it is advisable to increase this branch of the arm by 12 batteries forming a new regiment.

The foot artillery should be raised from 6 to 10 regiments.

The effective strength of the officers of the arm should be increased by 6 senior staff officers, 180 captains, and 140 lieutenants.

Engineers.—The principal modifications recommended are as follows:

1. To relieve the sappers of the bridging service and to create a pontoon regiment.
2. To transform the railway group into a regiment with three groups and a working section.
3. To render autonomous the group of specialists, which would give up the wireless telegraphy section to the telegraphists, and would take over the automobile section at present attached to the railway group.
4. To create for Sardinia an autonomous group (a company of sappers and one of telegraphists).

The Commission has also had under consideration the question of the promotion of officers; they consider that it is necessary to unify the length of grade in the rank of sub-lieutenant in all arms, to increase the number of examinations in order to develop the education of officers, and to regularise their career by establishing a single *rôle* for the superior officers of all the fighting arms. They ask that a fourth of the vacancies for sub-lieutenants should be kept for senior non-commissioned officers, who would receive direct promotion.

Finally, they complain that far too many men are taken away from their military duties for other accessory work.

The expense of these reforms would amount to 21 millions of francs (£840,000).—*Revue Militaire des Armées Etrangères.*

Italy.

Italy and Austria.—It has long been known that there is no love lost between the Dual Monarchy and Italy, its nominal ally in the Triplice. The Archduke Franz Ferdinand, the heir to the Austrian throne, makes no secret of his dislike of Italy, in which country the possible outcome of this hostility is viewed with some anxiety. According to *La France Militaire*, there was held last March at Prague a series of secret Councils of War under the presidency of the Archduke Franz Ferdinand, in which the eventuality of a rupture not only with Russia and Servia, but also with Italy was fully discussed. With this hypothesis in view, the Austro-Hungarian General Staff proposed that the IVth Army Corps, which is always stationed over against the Italian frontier, should be strengthened by the Ist Corps, concentrated in the Trent-Reveredo-Levico zone.

Somewhat earlier in the year certain more direct preparations were carried out in Carinthia. Orders were suddenly given for the clearing away of the snow along the southern frontier, some thousands of peasants being employed to clear those railways which, in case of mobilisation, would serve exclusively for the transport of troops and war *matériel*, not towards the Balkans or Galicia, but towards Italy, while for some time past vast quantities of stores have been accumulated in the Trentino. During the last three years the work of placing the General Staff in Vienna in telephonic communication by special cables with Trieste, Goritz, Pola, and Gervignano has also been carried out, the communication between Vienna and Gervignano having been completed last autumn, a matter of some importance, as, in case of mobilisation, Gervignano becomes the headquarters of the IInd Austrian Army Corps.

These preparations do not give the idea that the relations between the two countries are of a very cordial nature. Moreover, for the last two or three years the Austrian military Press has occupied itself with publishing various studies on the best method of carrying out operations in Upper Italy. The Russo-Japanese war has been drawn upon for contributions, the high cultivation of the valley of the Po presenting apparently many features analogous to that of the Manchurian plains. All the writers are agreed as to the probability of the next operations being on the Isonzo, in the Groetz-Treviso region, flanked by a demonstration in the Tyrol.

Italy, on her side, during the last three years has been making all possible efforts to minimise as far as possible the inferiority in which the comparative weakness of her Army, her inferior *matériel* organisation, her insufficient railway system, the form, even, of the frontier, which seems to condemn her to submit to the offensive of the enemy on the Ironzo, all combine to place her.

Financially her efforts may be seen in the proposal to spend a sum of more than 450 million francs (£18,000,000), which may be roughly made up as follows: Extraordinary credits voted in 1906, 1907, and 1908 for the complete renewal of the *matériel* of the Army, 299,000,000 francs (£11,960,000), divided between the military budgets from 1906-07 up to 1916-17.

New expenditure, 125,000,000 francs (£5,000,000), distributed over five financial years in accordance with the Bill recently laid before Parliament.

Italy.

Disposable surpluses from previous years, money accruing from the sale of Government land and of old *matériel* belonging to the State, about 40,000,000 francs (£1,600,000).

That is a total approximate expenditure for *matériel* alone of 465 million francs (£18,600,000), appropriated as follows :—

Rifles, machine guns, etc., 22 million francs (£880,000);
Mobilisation supplies, 30 million francs (£1,200,000);
Fortifications, 186 million francs (£7,440,000);
Field Artillery, 146 million francs (£5,840,000);
Military establishments, 23 million francs (£920,000);
Horses and mules, 9 million francs (£360,000);
Contingent expenses, 50 million francs (£2,000,000).

It may be remarked that out of the sum of 186 million francs (£7,440,000) appropriated for fortifications, 160 million francs (£6,400,000) is to be devoted to defensive works on the eastern frontier, which is directly menaced by an offensive movement on the part of Austria. It is intended to form a vast entrenched camp on the Udine Plain, between Udine and the sea, defended by extensive works, consisting of long lines of trenches with narrow profiles, protected by more important defensive works supported by a formidable artillery. Eighteen armoured cupolas (not supplied by Krupp, it may be remarked) are to be provided for the frontier forts and those of Venice. The armament of the defences of this last-named city is to be strengthened by some new batteries of 12-inch guns and 11-inch mortars.

It is intended at the same time to increase the peace effective strength of the Army by an addition to the infantry of 25,000 men with 11 field batteries and four regiments of fortress artillery.

Italy is also taking steps, in view of the determination of Austria to lay down battleships of the *Dreadnought* type, to add to her naval power. A new credit of 440 million francs (£17,600,000) has been asked for from Parliament, and two new 20,000-ton battleships, the *Dante-Alighieri* and *Leonardo da Vinci*, have already been laid down, while steps are being taken to strengthen the Venice-Ancona naval base, which faces the Austrian Pola-Fiume.

In brief, both on land and sea, Italy, although outwardly faithful to the Austro-German alliance, pressed by popular sentiment, is nevertheless preparing to defend herself against a probable attack in the future, for no one speaks even of taking the offensive. On the other hand, much is written in Vienna about the supposed offensive campaign Italy is planning against Austria, which is said to be based on a landing in force at Fiume, with the view of the campaign being settled on the Hungarian plains, with the help of the numerous Slav and Magyar elements, who are not too favourably disposed towards the Dual Monarchy.

It certainly would appear, concludes *La France Militaire*, as if a war, the chances of which are being so carefully studied, which is expected by both nations whose respective interests in the Adriatic it seems impossible to reconcile, must sooner or later break out. It is necessary, therefore, for France to prepare herself actively to face the complications which such a war must bring about for the whole of Europe.—*La France Militaire.*

Italy.

The Influence of Emigration on Recruiting.—The continued decrease in the recruit contingents is to be traced to the increased emigration which has been steadily taking place since 1898. Those neighbourhoods which show the largest number of emigrants contribute the fewest recruits. Of the class of 1886, which became liable for service in 1906, only 4,300 out of the 27,000 on the list reported themselves, or one out of every six of those registered as emigrants.

It is noteworthy that in spite of repeated amnesties, the number of deserters and absentees does not appear to diminish. Since 1895 at least eight amnesty laws have been passed without any improvement resulting. When emigration moved in certain limits it was formerly not altogether disadvantageous to the country, but it has now become a danger to its military strength. Of the class of 1886, a further 40,000 men, who live abroad, have failed to report themselves, and it is clear that to fill this leakage the military burden must fall with much greater severity upon those who remain at home.—*Danzer's Armee-Zeitung.*

Biaentenary of the Campaign of 1859.—The 30th of May, the anniversary of the battle of Goïto (1848) was kept as a holiday by the Army, special prize meetings being held, which were arranged by the commanding officers of corps.

a. The regiments whose colours had been decorated with the military medal for valour on the occasion of the campaign of 1859, or a unit of which had taken part, received gold and silver medals as prizes in the competitions.

b. Other troops received silver medals.

In addition to each of the regiments under (*a*) a commemoration medal in silver was presented.

The same day took place at Rome a grand fencing competition and a lecture on General Eusibe Bava, the hero of the two battles of Goïto (8th of April and 30th of May, 1848), of which the first inaugurated the war of Italian independence.

On the 24th of June the anniversary of the battle of Solferino-San Martino was solemnly commemorated on the field of battle.

The Army was represented, at San Martino, by a battalion of infantry, with band and colours, a squadron of cavalry, and a battery of artillery (from Brescia), and a battalion of Bersaglieri (from Desenzano); at Solferino, by a battalion of infantry, with band and colours, two squadrons of cavalry (from Mantua), and a section of artillery (from Brescia).

In addition, all the regiments which took part in the battle of San Martino sent deputations, composed of a colonel or a field officer, a captain, a colour bearer, a sergeant, and two corporals or soldiers.

On the same day in all regiments and detachments a lecture on the battle of Solferino-San Martino was delivered to the men.—*Revue Militaire des Armées Etrangères.*

The Netherlands

Modifications in the Militia Law of 1901.—In the early days of last December the Dutch First Chamber passed by 44 votes to 2 the modification in the Militia Law of 1901, brought forward by the Minister of War. These modifications had already been adopted by a large majority the previous month by the Second Chamber.

The Netherlands.

The object of the new law is to lighten the charges imposed on both the State and the country at large by the necessity of maintaining a permanent Army, without compromising the superior interests of National Defence. It also attempts to settle the much vexed question of what is known as the *portion restante* (*blijvende gedeelde*) of the Dutch Army. The attempts to settle this question has already brought about the fall of two previous Ministers of War—Generals Staal and van Rappard.

According to the Militia Law of 24th June, 1901, and that of the *Landweer* of 27th July, 1901, every citizen is liable for personal service during 15 years, of which 8 are passed in the Militia and 7 in the *Landweer*.

The annual contingent was divided into two portions:—

1. 12,300 Militiamen serving 8 months and a half in the unmounted arms, 18 months in the mounted arms.
2. 5,200 men who served for 4 months, but who had to show that they had undergone a certain amount of preparatory military instruction.

The Militiamen are drawn by lot from among the men passed as fit for military service.

In order to assure continuity of service, the Minister could retain under arms a certain number among them, who composed this so-called *portion restante*. These men were retained for 4 months (in the unmounted arms) or 6 months (in the mounted). They were drawn by special lot in each corps, and could exchange their numbers among themselves, the cost of getting a substitute being from 60 to 150 florins. The effective strength of the *portion restante* had of late years fallen from 6,270 men to 2,180.

The main alteration brought about by the new law consists in the annual calling up of the men liable for service in the Militia in the unmounted arms taking place in two different periods of the year instead of only at one.

According to the new system, the recruits called up for 8 months' service will be divided into two groups. The first, 4,000 men, will remain under the colours from the 15th of March to the 30th of November, and will serve to constitute two companies in each battalion. The two other companies will receive on the 31st of May all the men doing 4 months' active service, and, on the 30th of September, the second group of 4,000 men, who have to put in 8 months.

Each year this division will alternate, so that the two companies which have received one year the four-months men and the autumn half-levy of the eight-months, will receive the following year the spring half-levy of eight-months men, but no four-months recruits.

Following the first instruction of each half-levy of the eight-months men, a *portion restante* will continue active service for another two months. The effective strength of this number will be about 4,000 men. The four-months men will draw lots by halves for this service, each half concurrently with one of the eight-months half-levies. The length of this period of service is lowered from four to two months.

In this way each eight-months half-levy, with the *portion restante*, overlaps the other about four months. During this time, this last is excused all guard and fatigue duty. This system favours, better than the old, the formation of the Training *Cadres,* and it assures a constant covering force in case of mobilisation.

The companies of each battalion will thus have an identical force and composition. The summer and winter service will be equally divided. This new organisation will allow of recruits following their instruction without interruptions caused by fatigue duties. While improving the working of the military service, these modifications will realise a reduction of two months of service for each man and 18,328 days of maintenance for the State, which means an economy of 502,833 francs (£20,113). There will also be under the colours, available for the Grand Manœuvres, a large number of men in the month of September.

The results of the trial of the new regulations in the infantry will show if they can be applied to the unmounted corps of the artillery and engineers; if the new plan works well, the law of 1901 will be definitely modified and applied to all the unmounted corps. In the meanwhile the Militiamen told off for these corps will be incorporated in March, and the service for the *portion restante* will be four months, as formerly.

In the mounted artillery and cavalry the Militiamen will be called up: for the artillery, at the same time as the spring eight-months levy, and for the cavalry at the same time as the autumn levy. They will be incorporated respectively at these levies if the number of volunteers is insufficient.

This system applies equally to the Naval Militia destined to complete the crews of the home defence ships. However, the special exigencies of this service do not render possible the calling up of the second half-levy on the 1st of October. This time of year is, as a matter of fact, the most unfavourable for training on board—training which lasts from three months and a half to four months. Called up on the 1st of August, the men of the second half-levy are able to replace those incorporated in March, when these last take their departure. There remains then an interval of twelve weeks between the time when the men of the second half-levy are set free and the men of the spring levy come in. This void would be filled up by the calling out in two classes of the men in their third year of service who have to put in a six weeks' period of training. To sum up, according to the new law the military service in Holland will be regulated as follows:—

Total length of liability for service, 15 years (20 to 35 years): eight years in the Militia, seven years in the *Landweer.*

Active service:—

- Eight months and a half in the unmounted arms;
- Eighteen months in the mounted arms;
- Four months for 5,200 Militiamen who can prove a certain amount of military instruction or school proficiency; or, in case of a numerical deficiency, for the Militiamen who have drawn the highest numbers;
- Ten months and a half (infantry), twelve months and a half (other unmounted arms), twenty-four months (mounted arms): for the Militiamen of the *portion restante* drawn by lot in the contingent, with possibility of exchange of numbers on payment of a pecuniary indemnity.

The Netherlands.

Date of summons to the colours:—

The 15th of March and the 1st of October for the Militiamen serving eight months and a half in the infantry;

The 1st of June for those serving four months in the infantry;

The 1st of October for the cavalry;

The 15th of March for the unmounted troops other than the infantry, and for the mounted artillery.

It does not appear that the Army officers, especially the captains, are very enthusiastic over the new measures from which the Minister expects so much. With regard to the fortress artillery, it would appear *a priori* that the winter exercises, which are of quite a different nature to those of the infantry, offer some difficulties not easily to be surmounted. In addition, it is expected that the institution of the four months' service Militiamen will disappear before long, since the new Minister at different times has shown himself opposed to it. — *Revue Militaire des Armées Etrangères*, and *Revue Militaire Suisse.*

NAVAL AND MILITARY CALENDAR.

JULY, 1909.

5th (M.) Presentation of Colours to and Review of the West Lancashire Division (Territorial Force) by H.M. the King at Knowsley Park.

5th & 6th Centenary of the Battle of Wagram, when the Austrians were completely defeated by Napoleon.

6th (T.) Presentation of Colours to and Review of the East Lancashire Division (Territorial Force) by H.M. the King at Worsley Park.

8th (Th.) Inspection of the Hon. Artillery Company by H.M. the King in the grounds of Buckingham Palace.

„ „ Bicentenary of the Battle of Poltava, in which Peter the Great utterly defeated Charles XII. of Sweden.

9th (F.) Inspection of the Boys of the Royal Hospital School, Greenwich, by H.M. the King in the grounds of Buckingham Palace.

11th (S.) Launch of second-class cruiser *Augsburg* from the Imperial Dockyard, Kiel, for German Navy.

14th (W.) Loss of submarine C11 off Cromer by collision with s.s. *Eddystone*, 13 lives lost.

„ „ Resignation of Prince von Bülow as German Chancellor, and Herr von Bethman-Hollweg appointed as his successor.

16th (F.) Deposition of Shah of Persia, and his son, the Crown Prince, proclaimed Shah in his stead.

17th (Sat.) Arrival of the Home and Atlantic Fleets in the Thames.

20th (T.) Official visit of the Lord Mayor and Lords of the Admiralty to the Fleet off Southend.

„ „ H.M.S. *Philomel* arrived at Portsmouth from East Indies.

21st (W.) Forty officers and 1,200 men of the Fleet entertained at Lunch at the Guildhall by the Lord Mayor and Corporation.

22nd (Th.) Luncheon to Admiral Sir W. May and 500 Officers of the Fleet at the Guildhall by the Lord Mayor and Corporation.

23rd (F.) H.R.H. the Duke of Connaught resigned his post as Commander-in-Chief and High Commissioner in the Mediterranean.

24th (Sat.) Fleet in the Thames dispersed.

26th (M.) Inspection of Australian and New Zealand Contingent of Bluejackets by H.M. the King in the grounds of Buckingham Palace.

„ „ Military contingents of the four Protecting Powers (England, France, Italy and Russia) withdrawn from Crete.

„ „ H.M.S. *Philomel* paid off at Portsmouth.

27th (T.) H.M.S. *Philomel* recommissioned at Portsmouth.

27th & 28th Centenary of the Battle of Talavera.

28th (W.) Government scheme for formation of Territorial Force Reserve announced in House of Lords.

30th (F.) Arrival of Home and Atlantic Fleets in Solent for Royal Review.

31st (Sat.) Review of Home and Atlantic Fleets by H.M. the King.

FOREIGN PERIODICALS

NAVAL.

Argentine Republic.—*Boletín del Centro Naval.* Buenos Aires : April, 1909.—"Officers in Charge and their Divisions." "A Study on the Theme for the Fourth Strategical Period of the Argentine Naval Manœuvres, 1909." "The Surrender of the Russian Torpedo Destroyer *Bedovy,* and the Court-Martial."

Austria-Hungary.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 8. Pola : August, 1909.—"Repairs to Ships' Machinery." "Extracts from the Year's Reports of the U.S. Navy for 1908." "The Combined Engine System on board the White Star Liner *Laurentic.*" "The Report of the French Parliamentary Enquiry into the French Navy." "A Gyroscope Compass."

Brazil.—*Revista Maritima Brazileira.* Rio de Janeiro : May, 1909.—"The Minister of Marine's Report on the Navy." "Coast Defence." "The Brazilian Navy." "Summary of the Work of the Russian Naval Department, 1908." "Shrapnel Shells." "Voyage of the *Benjamin Constant* round the World."

Chili.—*Revista de Marina.* Valparaiso : April, 1909.—"The Renovation of the Fleet." "The Central Office of Navigation and Pilotage and its Specialisation on Board." "The Fast Wing." "Protection of the Mercantile Marine." "The Climate of the Coast of Chili." "Steam Turbines and their Application to the Propulsion of Ships." "Armour Plates and their Attack by Projectiles." "The Question of the Engineers."

FRANCE.—*Revue Maritime.* Paris: May, 1909.—"A Study on the Corrosion of Metals" (*concluded*). "Night Actions." "The Question of the Defence of Denmark." "Gas or Steam for Marine Motors." "A Special Example in the Question of Scouting at Sea."

La Marine Française. Paris: July, 1909.—"The Enquiry into the Navy." "Toulon and Brest." "The Reform of the Central Administration." "The Navy and the Colonies: Phantom Squadrons. Does France need a Colonial Navy?" "Ten Milliards for an Hour of Useless Battle." "Waste and General Neglect."

La Vie Maritime. Paris: 10th July, 1909.—"The Commission of Enquiry into the Navy." "The new Armoured Cruiser *Ernest Renan.*" "The Bos-Caillaux Incident." "The Naval Artillery: What has become of the Reorganisation Project?" "Submarines to be Constructed." 25th July.—"Our Lawsuit." "The Caillaux-Bos Duel." "The Ministerial Crisis." "Some Considerations on the Administrative Working of the Fleet in Commission." "Wireless Telegraphy (Artom System)." "The Utilisation of Naval Officers."

Le Yacht. Paris: 3rd July, 1909.—"The Instruction of Gunners." "Yachting Notes." "The New Argentine Gunboats *Parana* and *Rosario.*" "The New Destroyer *Voltigueur.*" 10th July.—"The Conclusions of the Committee of Enquiry." "Yachting Notes." "The Projected Battleships and Triple Turrets." "Some Words on the General Strike at Marseilles." 17th July.—"The Naval Manœuvres of 1909." "Yachting Notes." "The U.S. Armoured Cruiser *Montana.*" "The English Naval Manœuvres." 24th July.—"The Utilisation of Torpedo Boats." "Yachting Notes." "The *Sakura Maru*, the first Ship of the Japanese Volunteer Fleet." "The Fire Service in the Dockyards." 31st July.—"The Naval Estimates for 1910." "Yachting Notes."

Le Moniteur de la Flotte. Paris: 3rd July, 1909.—"The Future Battleships." "The Navy in Parliament: The Committee of Enquiry into the State of the Navy." 10th July.—"The Naval Manœuvres." "Reorganisation of the Gunnery School." "The Navy in Parliament." "The Seamen's Clothing." 17th July.—"The Naval Manœuvres." "The Administrative Organisation of the Navy." "The Navy in Parliament." 24th July.—"The Safety of Submarines." "The Navy in Parliament." 31st July.—"The New Minister of Marine." "Fire Observation Posts." "The Seamen's Clothing."

GERMANY.—*Marine Rundschau.* Berlin: August-September, 1909.—"The Derivation of Tactical Fundamental Truths from Naval History." "The Right of Search of Neutral Ships under Convoy in time of War." "The Duties of Modern Torpedo Boats." "The Results of the Enquiry into the State of the French Navy." "The Shipbuilding Programme of the Brazilian Navy and the Annual Report of the Minister of Marine." "The Colour of Battleships." Exchange of Views on the Article, "Young Seamen."

ITALY.—*Rivista Marittima.* Rome : May, 1909.—"The Presentation of a Battle Flag to H.M.S. *Napoli.*" "The Anchorage of Benadir." "A Single Corps of Officers." "The Methods of Loading present Large-calibre Guns." "Italian Commerce in 1906."

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon : May, 1909.—"The Origin of Great Britain" (*concluded*). "Portuguese India." "The National Congress and the Navy."

June, 1909.—"The Emigration of Natives from the South of the Mozambique Provinces to the Transvaal." "Colonial Problems" (*continued*). "Genealogical and Biographical *Data* of some Fayal Families." "Colonial Movement."

Annaes do Club Militar Naval. Lisbon: June, 1909.—"Practice, Practice, and More Practice." "The Methodical Preparation for Naval Battle." "Air Refrigerating Machines." "The War in Guinea."

SPAIN.—*Revista General de Marina.* Madrid : July, 1909.—"The Battle of Trafalgar" (*continued*). "Naval Demography." "The Training Squadron." "Battle Firing Practice at Sea."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna : 1st July, 1909. "Who Won the Battle of San Martino?" "The Hour of the Battle of the 6th July, 1809." "Some Lessons from the Strenuous Days on the South-east Frontier." "The Fight about the Kokotović Sight." 8th July.—"A Hundred Years Ago : Wagram, 5th and 6th July, 1809." "Fifty Years Ago : The Causes of the Victory and Defeat, 1859." "Crete." "England and India—and Austria." "The Roumanian Army." 22nd July.—"The Peterwardeiner !" "The new Army Law." "What our Navy Requires." "The new Local Railway Proposals in the Austrian Parliament." "Uncertainty in the Army." "The Official Report on the Kaiser Manœuvres of 1908." "The English Press on the Turkish Army."

Streffleurs Militärische Zeitschrift. Vienna : July, 1909.—"Training Camps." "Battalion Guns of the Future." "Our Military Science Club Libraries." "Esperanto in the Service of the Red Cross." "The Events at Sea in the Russo-Japanese War from the Commencement of the War to the Beginning of May, 1904" (*concluded*). "The Greek Army, 1909."

Kavalleristische Monatshefte. Vienna : July-August, 1909.—"The Exercises of the Oberst Tarlowski *Landwehr* Cavalry Brigade, May, 1909." "Letters on the German Cavalry Instructions." "The Pursuit after Jena and Auerstädt." "Earlier Dress of the Imperial Cavalry Regiments." "Observations on the Employment of the Cavalry in the German Kaiser Manœuvres, 7th and 8th September, 1908." "The Cavalry Attack on Infantry and its Influence upon the Battle." "Cavalry Divisions." "The Use of Cavalry in Mountainous Country." "The Roumanian Cavalry." "The Klapp Bayonet." "Cavalry at Night." "Something on the Distance Ride, Essegg-Mitrowitz (110km.) on 6th May, 1909." "Winning Mares." "Hunting and Racing Riding." "The Swiss Cavalry." "Italian Views on

Fighting on Horseback." "Horsemen and Cyclists." "Moon-blindness in Horses." "Tactical Problems for the Cavalry Officer."

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th June, 1909.—"The Publication of Orders in Grand Units" (*concluded*). "The Grand French Manœuvres in 1908" (*continued*). "Field Artillery in Conjunction with other Arms." 30th June.—"Field Artillery in Conjunction with other Arms" (*continued*). "Grand French Manœuvres in 1908" (*continued*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st July, 1909.—"The March on Vienna" (*concluded*). "The Promotion of Officers." "Modern Artillery." "Study on the Intellectual Orientation of Company Officers" (*concluded*). "The Railways in French West Africa" (*concluded*). 15th July.—"Impressions of an Officer of the Russian General Staff on the Imperial German Manœuvres in 1908." "The Promotion of Officers" (*continued*). "The 29th August, 1870, and the Army of the Meuse." "The Command of Troops: Service of the General Staff" (*continued*). "The Physical Re-education of Malingerers and Men of Weak Physique in the Army."

Revue d'Infanterie. Paris: June, 1909.—"The New Manœuvre Regulations for the Spanish Infantry." "Study of the Methods of Battle of the German Army" (*concluded*). "The Realities of the Field of Battle" (*concluded*). "Technical Inventions: The Marten-Hale Grenades."

Revue de Cavalerie. Paris: July, 1909.—"General Gallifet." "The new German Cavalry Regulations." "The Cavalry: Yesterday and To-day" (*concluded*). "Manœuvres of Light Cavalry." "The Soldier."

Revue d'Artillerie. Paris: May, 1909.—"A Goniometer for Reconnoitring." "Determination of Objects Concealed from View by means of a Captive Balloon" (*concluded*). "The Mexican Automatic Rifle." "Lateral Observation of Field Fire."

Revue Militaire Général. Paris: June, 1909.—"Waterloo." "The Connection between the Combatant and Non-combatant Branches of the Army." "Two Studies of Alpine Tactics."

Le Spectateur Militaire. Paris: 1st July, 1909.—"The Conscription of Native Mussulmans in Algeria" (*continued*). "Discipline, Crime, Military Justice" (*continued*). "Journal of the Marches and Battles of the Infantry Regiment of Anjou, during the War of the Austrian Succession" (*concluded*). "Covering Manœuvres" (*continued*). 15th July.— "Discipline, Crime, Military Justice" (*concluded*). "Manœuvring over Woody Ground." "The Conscription of Native Mussulmans in Algeria" (*continued*).

Revue d'Histoire. Paris: July, 1909.—"The *Rôle* of Pichegru at Mannheim (September, 1795)" (*concluded*). "The Passage of the Inn (9th December, 1800)" "General von Goeben in 1870." "The War of 1870-71: The National Defence in the Provinces" (*continued*). "Military Justice in the Army of the Rhine and Moselle, 1792-1796." "Unpublished Letters of Napoleon I."

Revue Militaire des Armées Etrangères. Paris: July, 1909.—"The New German Foot Artillery Regulations." "Observations on the Imperial Austro-Hungarian Manœuvres of 1908." "The English Military Forces in the Spring of 1909."

GERMANY.—*Militär-Wochenblatt.* Berlin: 1st July, 1909.—"Night Fighting of the Japanese in 1904." "Sixty Years Ago: The Defence of Redoubt No. 3, before Fredericia, by Major Wilhelm von Schmid." "Against Rubbishy Literature." "The Cadets' Sports." 3rd July.—"A Hundred Years Ago: Wagram." "Night Fighting of the Japanese in 1904" (*continued*). "Sixty Years Ago" (*concluded*). 6th July.—"A Hundred Years Ago" (*continued*). "Night Fighting of the Japanese in 1904" (*continued*). "A Balloon Chase by an Automobile." "On the Observation Car of the Field Artillery." 8th July.—"Two Hundred and Fifty Years Ago: The Attack on Fünen Island on 8th July, 1659." "Heavy Mountain Guns." "Night Fighting of the Japanese in 1904" (*concluded*). 10th July.—"Nauticus, 1909." "The Island of Crete." "How Frederick the Great tried to stop the Game of Hazard." 13th July.—"Impressions of the Fleet Exercises upon the Army Officers." "The Hand-Firearm in War and Peace." "The Protection from Attack at Short Range of Masked Artillery Positions." "The Kokotović Sight." "Military Training of Young Men." 15th July.—"The Bavarian Military Handbook." "The New Swiss Rifle." "Examination for Entry to the Staff College in England." 17th July.—"The Commanding Generals of the German Army from 1889 to 1909" (*continued*). "Medical Report on the Imperial German Navy for the Period from 1st October, 1906, to 30th September, 1907." "The Bavarian Military Handbook" (*concluded*). "Italy's Armaments by Land and Sea." 20th July.—"Reminiscences out of the Life of Lieut.-General Frederich Karl von Schmidt." "The Danish Army." 22nd July.—"The Work of the General Staff on the Seven Years' War." "One Hundred and Fifty Years Ago: Kay" (*continued*). "The French Medical Reports, 1902 to 1906." 24th July.—"Sixtieth Service Jubilee of the Saxon General of Infantry von Reyher." "One Hundred and Fifty Years Ago" (*continued*). "The Fortress of Melilla and the Spanish Fights with the Moroccans." 27th July.—"The Battle of Talavera on the 27th and 28th July, 1809." "The Russian Army." "School and Military Aptness." 29th July.—"The First Hundred Years of the Ulan Regiment, King William I. (2nd Württemberg), No. 20." "The Influence of Arbitration Proceedings upon Military Training." "March of Major-General von Ewald with a Danish Corps through Trittau against von Schill to Stralsund." 31st July.—"One Hundred and Fifty Years Ago: Minden" (*continued*). "March of Major-General von Ewald with a Danish Army Corps through Trittau against von Schill to Stralsund" (*concluded*). "New Formations in Italy."

Artilleristiche Monatshefte. Berlin: July, 1909.—"The Report of the Military Commission on the Reorganisation of the French Artillery." "Land Artillery Ranges." "Artillery Lessons from the French Manœuvres." "The Objectives of the Heavy Artillery in the Opening of Battle." "Some Remarks on Firing with High Elevation." "Determination of the Velocity of a Projectile and the Resistance of the Air by means of a Range- and Elevation-Table." "Wheeled Gun Carriages." On the Essay: "A New Form of Prism for Telescopic Sights."

Jahrbücher für die Deutsche Armee und Marine. Berlin: July, 1909.—"Thoughts on the Further Development of Field Artillery." "The Advance with an Extended Front." "Contribution on the Co-operation of Infantry and Field Artillery of the 5th Japanese Division at the Battle of Mukden." "Impressions of the Riding Competitions at the Royal Hanoverian Riding School on the 2nd and 3rd of April last."

Internationale Revue über die Gesamten Armeen und Flotten. Dresden : August, 1909.—"Naval and Military Intelligence of Belgium, Germany, France, The Netherlands, Italy, Austria-Hungary, Russia, and Switzerland." *Supplement No.* 110.—"Accidents with Guns, Machine Guns and Rifles or their Ammunition in 1907 and 1908." *French Supplement No.* 125.—"Tactical Employment of Lights with Electric Projectors." "Infantry Fire Against Balloons."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: April, 1909.—"The Works carried out by the Engineers in the District of Reggio, in Calabria, after the Earthquake of the 28th December, 1908." "Ferdinand of Savoy, Duke of Genoa." "Aerial Navigation and the Wright Aeroplane." "On the Subject of Names and Definitions." "Some Notes on Hand Grenades." "The Construction of Helicoid Gear Wheels." "Tissara's Curve Tracer for the Design of Gear Wheels."

Rivista Militare Italiana. Rome : 16th June, 1909.—"The War Office and the Central Organs of the Army." "About Manœuvres on the Map." "Some Geographic Military Notes on the Territory lying between Massowa, Asmâra, Acsùm, and Adigrat." "The Fire of Infantry." "Military Expenditure and National Economy." "Garrison Libraries." "A Plea for the Definite Settlement of the Problem of our Non-commissioned Officers" (*continued*). "From Novara to San Martino." "The Italian Military University." "Free Libraries and the National Education of Troops."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid: 1st July, 1909.—"Retirements and Pensions." "Marshal Soult in Portugal : Campaign of 1809" (*continued*). "Examination of the French Frontier" (*continued*). "Philosophic Reflections about War and Soldiers" (*continued*). "Field Range-Finder" (*continued*). "The New Tactics" (*continued*). "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School in 1907" (*continued*). "The French Generals in Africa." 15th July.—"Marshal Soult in Portugal : Campaign of 1809" (*concluded*). "Field Range-Finder" (*continued*). "The Military Policy of France in Africa." "Examination of the French Frontier" (*continued*). "Philosophic Reflections about War and Soldiers" (*continued*). "The New Tactics" (*continued*). "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School" (*continued*).

Revista Científico-Militar y Bibliotéca Militar. Barcelona : 10th July, 1909.—"The Crisis of the Victory." "The Armies of the Future." "On Infantry Fire." "Aerial Attack." "Japanese Lessons from the Last War." 25th July.—"Melilla." "Instruction and Education." "The Armies of the Future" (*continued*). "The Arabs." "Infantry Attack Formations from the Artillery Point of View."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne : July, 1909.—"Intemperance and National Defence." "Aerial Torpedoes." "The Swiss in Italy" (*continued*). "The 120mm. Field Howitzer, with Rear Trunnions (System Schneider)."

UNITED STATES.—*Journal of the United States Infantry Association.* Washington : July, 1909—"The Regular Army." "The First Battle of Bull Run." "Our Present Drill Regulations." "Looking Backward." Selection *versus* Seniority." "The E 14th Infantry Pack." "Cavalry and the Aeroplane." "History of the 21st U.S. Infantry."

Journal of the U.S. Cavalry Association. Fort Leavenworth, Kansas: July, 1909.—"Horses and Riding" (*concluded*). "Horse Breeding in Prussia." "Veterinary Service of the United States; Historical Sketch." "Principles of Fire and the Technical and Practical Use of the Present Rapid Field Artillery." "Machine Gun Experiments." "Individual Instruction."

NOTICES OF BOOKS

Staff Rides and Regimental Tours. By Colonel R. C. B. HAKING. London : Hugh Rees, Ltd., 1908.

The literature on this increasingly important branch of military education is not yet very large, and there is certainly no one better qualified to explain its methods than Colonel Haking. He has had for many years a large experience of staff rides; he has been both the instructor and the instructed; and he is universally recognised as an expert in the particular forms of these exercises of which he treats in this little book. Its scope, as he tells us in his preface, is limited to the comparatively small staff rides, held in commands, divisions, and brigades, to regimental tours, and to other regimental exercises on the ground; of the larger staff rides, such as are conducted by the higher military authorities of the Army, and of which the advantages are necessarily confined to a very limited circle, there is here but small mention. The whole matter connected with staff rides is carefully gone through from the very beginning; there is a very excellent opening chapter on the training of officers for war, and this is followed by one wherein *all* the preliminary arrangements for a staff ride are discussed, from the selection of the locality and arrangements with hotel-keepers to the best means of locomotion for the officers engaged. Five chapters are devoted to the due consideration of the preparation of the scheme—the limitations of detachments, the danger of the too-imaginative scheme, how those based on actual events, taken from real history, may be made to serve. The chapter on the method of directing a staff ride contains much that is of very real value, while the suggestions for criticising work and for the conduct of conferences, are embodied in a chapter, every word of which breathes of that tact which we all claim to possess, but which is given in fullest measure to so few. Colonel Haking writes for the regimental officers of the Regular Army, as also of the Territorial and Imperial Forces, and for these the chapters on regimental tours and on the conduct of a war course will provide something of a more personal interest. Here the scheme, of such importance in the larger operations treated of in the opening chapters of the book, becomes of infinitely less value than the carrying out of tactical exercises on the actual ground, for which purpose the map should, whenever possible, be discarded, and those taking part should be encouraged to make their plans and state their intentions by references to the ground features in their view.

Colonel Haking impresses upon his readers throughout the need for the strictest observance at all times of the principles contained in the official manuals; the suggested exercises are admirable, and the sketches clear and helpful; while he writes throughout, not only as one who knows his subject by heart, but who really enjoys imparting to others the instruction he is so well qualified to give.

Notes on Staff Rides and Regimental and Tactical Tours for Beginners. By Major T. E. FOWLE. London and Aldershot: Gale and Polden, Ltd., 1908.

As this little book has already run into two editions, it seems likely that it has been found useful by others than the mere beginners, for whom its pages were primarily intended. Staff rides would seem to have come upon the commissioned ranks of the Army with some suddenness, to have been almost of the nature of a surprise, to have called officers to take part in them before they had any very clear idea of the work that was expected of them. For such a book, then, as that prepared by Major Fowle, there was a real need, and his general arrangement of the subject matter seems clear and practical, while the headings being given in leaded type, the reader is assisted materially to find any particular paragraph of which he may be in search. Written mainly for officers serving in India, it should be equally useful to men soldiering in England; the orders and instructions at the end are very much to the point. The little book is of a very convenient size, and if, perhaps, not so ambitious in general scope as some other publications on the same subject, the methods advocated by Major Fowle are simple and eminently instructive. These "Notes" seem especially suitable for regimental officers in general and for Territorial officers in particular.

PRINCIPAL ADDITIONS TO LIBRARY DURING JULY, 1909.

Life of Field-Marshal Sir Neville Chamberlain, G.C.B., G.C.S.I. By G. W. FORREST. 8vo. 18s. (William Blackwood & Sons.) London, 1909.

An Introduction to Military Geography. By Brigadier-General E. S. MAY. 8vo. 8s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1909.

Lectures on the Strategy of the Franco-German War, 1870, *up to the Battle of Sedan.* By Brevet-Major W. D. BIRD. 8vo. 6s. (Presented.) (Hugh Rees, Ltd.) London, 1909.

An Introduction to Military Geography. By J. FITZGERALD LEE. (*Civil and Military Gazette.*) 8vo. 4s. 6d. Lahore, 1908.

Handbook of the Austro-Hungarian Army. 4th Edition. Prepared by the General Staff, War Office. 12mo. (Presented.) (Mackie & Co., Ltd.) London, 1909.

La Campagne de 1814 *en France.* Par le Général Carl von Clausewitz. Traduit de l'Allemand par G. Duval de Fraville, chef d'Escadron. 8vo. 2s. 8d. (Henri Charles-Levauzelle.) Paris, 1900.

Reminiscences of a Naval Officer during the late War. With sketches and Anecdotes of distinguished Commanders. By Captain A. CRAWFORD, R.N. 2 vols. 8vo. 9s. (Henry Colburn.) London, 1851.

Ueber Kriegsmässige Ausbildung und Verwendung unserer Kavallerie. By RITTMEISTER FREIHERR VON EDELSHEIM. 8vo. 4s. 6d. (Presented.) (R. Eisenschmidt.) Berlin, 1909.

Modern Riding, with Notes on Horse Training. By Major NOEL BIRCH, R.H.A. Crown 8vo. 6s. (Presented.) (Hutchinson & Co.) London, 1909.

Report of a Magnetic Survey of South Africa. By J. C. BEATTIE. 4to. (Presented.) (Cambridge University Press.) London, 1909.

Recollections of Military Service in 1813, 1814, *and* 1815. By Sergeant THOMAS MORRIS, of the 2nd Bn. 73rd Regiment of Foot. 8vo. 10s. (James Madden & Co.) London, 1845.

Training and Manœuvre Regulations, 1909. 12mo. 4d. (Presented.) (Harrison & Sons.) London, 1909.

Two Native Narratives of the Mutiny in Delhi. Translated from the originals by the late CHARLES THEOPHILUS METCALFE. 8vo. (Presented.) (Archibald Constable & Co.) Westminster, 1898.

Administration Report on the Railways in India for the Calendar Year 1908. By the Railway Board. Fcap fol. 2s. 8d. (Presented.) Simla, 1909.

Lectures on the Strategy of the Russo-Japanese War. By Brevet-Major W. D. BIRD. 8vo. 4s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1909.

The Army Annual, 1909. 8vo. 7s. 6d. (Presented.) (The Army Press.) London, 1909.

Across a Continent in a Man-of-War, being the Log of Commission of H.M.S. Pelorus, 1906-1907. By E. E. HIGHAMS. Crown 8vo. 5s. (The Westminster Press.) London, 1909.

Through Uganda to Mount Elgon. By the Rev. J. B. PURVIS. 8vo. 6s. (T. Fisher Unwin.) London, 1909.

Gunnery Drill Book for H.M.'s Fleet, 1909. 12mo. 9d. (Eyre & Spottiswoode, Ltd.) London, 1909.

Historical Record of the 76th "Hindustan" Regiment from its Formation in 1787 *to* 30*th June,* 1881. Compiled and Edited by Lieut.-Colonel F. A. HAYDEN, D.S.O. 8vo. (Presented.) (A. C. Lomax.) Lichfield, 1909.

The Engineering of Ordnance. By A. TREVOR DAWSON. (The Gustav Canet Lecture.) 8vo. (Presented.) (Perceval Marshall & Co.) London, 1909.

Rapid Night Marching Made Easy. By Major W. A. TILNEY, 17th Lancers. 8vo. 2s. 6d. (Edward Stanford.) London, 1909.

Le Champs de Bataille et le Pays de Waterloo en 1815 *et Actuellement.* By LOUIE NAVEZ. 8vo. 4s. 6d. (J. Lebégue et Cie.) Brussels, 1908.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

JULY, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

CONTENTS.

PAGE.

Part II. Section I. Books 1114

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II. SECTION I. BOOKS.

NOTE.—1. *When the price is not given in Part II., Section I., it is not known.*
2. *In Part II., Section I., books whose titles are given in foreign languages as well as in English, are published in those languages, and are not translated.*

HISTORICAL.

The British Empire, its Past, its Present, and its Future. Edited by A. F. Pollard, M.A. 864 pp. 8vo. London, 1909. The League of the Empire. Caxton Hall. 5/-.

This exhaustive account of the British Empire owes its origin to the generosity of Mr. Louis Spitzel and the enthusiasm of Mr. Thomas Henry Monk, though unfortunately, neither lived to see the result of their practical interest in the Empire. The work made possible by their efforts, however, was entrusted to the History Section of the League of the Empire, with Professor Bury as its chairman. The object of the volume is primarily educational and the secondary object is to make further provision for education in the Empire.

The work is divided into three sections (or books) and begins with a description of the physical features of the British Isles and a brief outline of English History from the year B.C. 55 up to the present time. It also deals with the founding of the British Colonies, commercial expansion, and other political and social problems. About one-third of the contents of the book is the result of the co-operation of men actually responsible for the government of the Empire in all quarters of the globe.

Book 2 deals with the self-governing States; their expansion, politics, natural resources, trade, &c.

Book 3 treats of the Empire of India, Crown Colonies and Dependencies.

Accounts of the wars in Canada, the American War of Independence, New Zealand wars, the several conflicts in South Africa, including the war 1899-1902, and wars in India are included in this volume, together with the events leading up to them and the results which followed.

The chapter on "Downing Street and the Colonies" (XVI.) and the concluding chapter on "The Future Organization of the Empire," are of interest to all students of the Imperial problem.

Cambridge Modern History, Volume XI. The growth of Nationalities. Edited by A. W. Ward, G. W. Prothero, and S. Leathes. 994 pp., with index. 8vo. Cambridge, 1909. University Press. 16/-.

This volume covers the period 1840-1871. From a military point of view the chief interest centres in Chapters XI., XVI., XXI., and XXVI. which deal respectively with "Great Britain and the Crimean War," "Bismarck and German Unity," "The Franco German War," and "India and Afghanistan." The first mentioned contains a brief account of the engagements in the Crimea and deals more fully with the origin and results of that war. The second gives an interesting account of Bismarck's policy from 1862 to 1871, commencing with the reorganisation of the Army and ending with the proclamation of the Empire at Versailles.

The chapter on the Franco-German War is full of military interest. It gives an excellent account of the policy of both nations and the effect of preparation for war, or the lack of it, on that policy.

Germany had made the utmost use of the lessons she learnt in 1866 and had perfected her organization in every detail, with the result that on the outbreak of hostilities she was able to put her machinery into working order at once and with the happiest results. She set herself the attainment of a definite object, namely, the destruction of the French armies in the field, and all subordinates worked for that object.

France, on the other hand, had been content to believe that her organization was perfect without testing it. The result was confusion, loss of initiative and disaster at the outset, from which she never recovered. Her soldiers fought stubbornly throughout and maintained the traditions of their nation, but lacked leaders and a definite purpose.

The deep study of every detail on the part of Moltke, and his controlling hand, is well brought out and forms a striking contrast to the ill-directed and spasmodic movements of the French.

The comparative ease with which the German army was able to carry out its right wheel was in itself a triumph for Moltke's organization.

The efforts to raise and organize huge masses of untrained men, after the siege of Paris began, although evidence of Gambetta's extraordinary energy, show clearly the hopelessness of such a task and serve as an object lesson to all nations of the folly of neglecting to prepare in peace time for what History shows is required in war.

The chapter "India and Afghanistan" traces the course of Indian history from 1815 to 1869. In the compass of the 30 pages allotted to this subject it is impossible to deal fully with any particular incident. The author has, however, succeeded in producing in this small space an excellent survey of the ever-changing vicissitudes of British rule in India, and, notwithstanding the complicated nature of the operations carried on, has presented a clear and interesting narrative of the period.

The value of the volume to the military student is increased by the addition of an excellent bibliography, which includes the chief works dealing with the campaigns of the period.

The Fifteen Decisive Battles of the World. New Edition. By Sir E. Creasy. 504 pp., with index. 8vo. London, 1908. Harper. 5/-.

Part I. containing Creasy's 15 decisive battles is full of interest and is well-known to students of History. The accounts are concise and bring out the characteristics of the leaders and the methods of warfare adopted by them, as well as the fighting qualities of the troops. The power of organization, the strategical and tactical plans of such men as Miltiades, Alexander, Scipio, Arminius, William the Conqueror, Marlborough, Peter the Great and Wellington are well worth careful study, while the account of Waterloo furnishes several interesting anecdotes not given in other publications on that campaign.

Part II. contains descriptions of the battles of Quebec, Yorktown, Vicksburg, Gettysburg, Sedan, Manila Bay, Santiago and Tsu-shima. Good as these brief sketches are, they suffer somewhat from being curtailed to an even greater extent than those contained in Part I. The accounts of Sedan, Gettysburg, and the naval battles of Manila Bay and Tsu-shima are of most interest.

The maps are hardly up to the standard of the work itself, especially in Part I., to which the addition of a General Map of the Ancient World would have been of value.

The Battle of Franklin. By Captain R. W. Banks. 88 pp. 8vo. New York and Washington, 1908. The Neale Publishing Company. 5/-.

If the author's object is to prove the truth of his description, given on the title page, of the battle of Franklin as "the bloodiest engagement of the war between the States," the method which he has adopted is somewhat primitive. He gives no statistics of the losses incurred in any other battle. It is, however, probably true that this battle was "in some parts of the line the bloodiest of the Civil War." It commenced at 4 p.m. of a November day and in some five hours fighting the Confederates lost over 6,000 men out of about 20,000 actually engaged. The author was acting during the battle as adjutant of an Alabama regiment forming part of Stewart's Corps, which was posted on the right of the Confederate attack.

He himself performed an act of notable bravery, which is described with due modesty. The account of the battle is little else than an eulogy of the splendid valour of the Mississippi regiments engaged. There is no criticism of Hood's tactics, and no connected narrative of the battle as a whole. It is stated that only four guns were engaged on the Confederate side and they but for a short time, out of regard for the women and children in the town. This statement, though originally made by Hood himself, is contradicted by the Federal General J. D. Cox, a participant in and historian of, the battle.

The Chancellorsville Campaign. By Charles Richardson. 124 pp. 8vo. New York and Washington, 1907. The Neale Publishing Company. 4/-.

The author, who is a Southerner, confines himself, as the title page "Fredericksburg to Salem Church" indicates, to an account of the part played by Sedgwick in the above campaign. The sketch, which he gives of the Federal general's operations, is very slight. It takes the shape of a narrative without criticism or comment, maps or plans, set forth in somewhat high-flown language, and consequently fails to throw any light upon the controversies, which have arisen in regard to the conduct both of Sedgwick and Early.

A Campaign in Upper Tonkin. (Une campagne dans le Haut-Tonkin.) By Captain Bernard. 177 pp., with 8 maps and plans. 8vo. Paris, 1906. Lavauzelle. 4/-.

The operations of the French troops are followed in detail from January to May, 1896, during which time they were not fighting against the hostile inhabitants of the country, but against Chinese pirates.

The author considers that the effects of these and similar operations will not have any permanent effect, and that Tonkin will always afford a career of adventure and profit for ambitious French officers.

German Official Account of the Russo-Japanese War (Wa-fan-gou). Authorised translation by K. von Donat. 256 pp., with 4 appendices, including 5 photographs; 11 maps in pocket. 8vo. London, 1908. Hugh Rees. 10/6. (For Yalu volume, see p. 14 of No. 8.)

This is a continuation of the history prepared by the German Great General Staff. The first portion dealt with Port Arthur, and of this no translation has yet been published. The second was an account of the events leading up to the war, and the operations by land and sea up to the Ya-lu, inclusive. The present volume is the third instalment, and deals with the operations after the Ya-lu and up to the evening of the 28th August, 1904, immediately preceding the battle of Liao-yang.

The work has the same defects as the translation of the second instalment, in that the names are spelt according to the German method, so that it is only by comparing dates that some of the places can be identified, and the English is at times a little hard to understand. The details are, however, worked out in a most painstaking manner and the book contains a quantity of useful information.

It is divided into six chapters, of which the first opens with a description of the situation in the south-western theatre towards the end of May, 1904. The battle of Nan-shan was described in the first part of the history, and only the briefest of references is here made to it; the earliest general action considered is that of the 2nd Japanese Army at Tê-li-ssu (Wa-fang-kou). The second chapter is a continuation of the first, and deals with the operations subsequent to Tê-li-ssu up to the beginning of August, 1904. General Kuropatkin is described as nervous lest his "southern detachment" at Kai-p'ing might be cut off, and as having lost heart after the reverse of Tê-li-ssu. The chapter includes an account of the battle of Ta-shih-ch'iao and of the arrival of the 4th Japanese Army, which came into position on the right of the second. ending with the occupation of Hai-ch'êng by the Japanese.

In Chapter III. the scene is shifted to the eastern theatre, and the operations are described from the time the 1st Japanese Army left Fêng-huang-ch'êng until the beginning of August, 1904. It is stated that Kuropatkin, being anxious about his left flank, sent the 10th Army Corps to check any movement in that direction, and that this corps sacrificed its initiative for the sake of having an entrenched position on to which it could fall back.

Chapter IV. contains a survey of the situation immediately before the operations leading up to the battle of Liao-yang. On the whole it is disappointing, but some interesting examples are given of the Russian ignorance as to the forces to which they were opposed. The total strength of the Japanese in Manchuria at this time, *i.e.*, the 1st, 2nd and 4th Armies, is placed at 125,000, while the number of Russians opposed to them is estimated at 185,000, of whom perhaps 140,000 were combatants. The Russians, moreover, received reinforcements during the fighting, whereas the Japanese grew steadily weaker owing to their heavy losses.

Chapter V. describes the operations resulting from the advance of the 1st Japanese Army at Liao-yang, and the fighting of the 26th to 28th August, while Chapter VI. deals with the 2nd and 4th Armies for the corresponding period, and closes with a general review of the situation on the evening of the 28th August, 1904.

The most interesting portion of the book is the chapter of comments with which it concludes. Although consisting of barely 10 pages, it is full of trenchant criticism from beginning to end. Attention is drawn to the peculiar effect which the geographical features of the country had upon the Russian strategy, by neutralizing to a large extent the advantage which they possessed in acting on interior lines, but adverse comment is made on the lack of decision and initiative displayed by the Russian commanders, and on their habit of relying on entrenched positions. The slowness of the Japanese advance is attributed to the necessity for making sure of everything which they gained, and of guaranteeing themselves against any reverse, however slight, lest difficulties should arise when they required their next foreign loan.

The Appendices show the organization of the forces on both sides.

The Russian Army and the Japanese War. By General Kuropatkin. Translated by Captain A. B. Lindsay, 2nd Gurkha Rifles, and edited by Major E. D. Swinton, D.S.O., R.E. In 2 volumes, with maps, illustrations and index. Fol. I., 309 pp.; Vol. II., 335 pp. 8vo. London, 1909. Murray. 28/-.

The original work consisted of four volumes, the first three of which dealt with the fighting round Liao-yang, on the Sha Ho, and at Mukden.

Captain Lindsay's translation embraces only the fourth and a small portion of the third volumes.

General Kuropatkin commenced his book in Manchuria while superintending the demobilization of the Russian forces after the war, and completed it at his country seat in Russia. Its publication in Russia was immediately stopped.

The work at present under review, being well translated and carefully edited, forms a readable and instructive publication, providing much food for thought as well as useful information for the student of Russian military organization.

As the translator aptly remarks in his preface, it is no mere *apologia*, but a protest that the war, as far as Russia was concerned, was not fought to a finish.

The following is a brief summary of the contents:—

Volume I. Author's introduction.—Sources from which the material for the first three volumes were drawn. Baneful influence of the Press. The work done by the Ministry of War during the period 1898-1904.

Chapter I.—The problems with which the Russian War Department was confronted during the past two centuries. Russia's struggle to reach the Baltic and Black Seas. The problems of Poland and Finland. Causes of the failure in the Crimea, 1854-55. Defective organization exposed by the Russo-Turkish War 1877-78.

Chapter II.—The strategical suitability of Russia's European and Asiatic frontiers. Possible results of a war with Germany or Austria.

No advantages to be gained by territorial acquisition in Persia. The possession of India would be an insupportable burden for Russia. Necessity for strengthening Russia's western frontier in preference to aggressive enterprise elsewhere.

Chapter III.—The expansion of the Russian army in the 18th and 19th centuries. The growth of neighbouring armies. Russia's isolation in 1878. Afghanistan a hostile buffer State. The inferiority of Russian strategic railways. The magnitude of the problem of the defence of the Russian Empire.

Chapter IV.—Russia's military policy in the 20th century. No need to increase her territory. Great danger on the western frontier owing to the perfect state of German and Austrian preparations. Russia, being essentially a land Power, ought not to spend large sums on a navy.

Chapter V.—The task which confronted the War Minister previous to 1904. Inadequacy of the sums voted for improving the army.

The strengthening of Russia's position in the Far East. Vladivostok and Port Arthur. The Siberian Railway. New Q.-F. field guns.

Chapter VI.—Kuropatkin's efforts, as War Minister, to avert hostilities with Japan. Bezobrazov and the Royal Timber Company.

Chapter VII.—Causes of the success of the Japanese. Their patriotism and high *moral*. Low estimate of their strength formed by the Russian staff.

Chapter VIII.—Reasons for the failure of the Russians. Insignificant part played by the fleet. Inadequate carrying capacity of the Siberian railway. Delay in mobilizing reinforcements. Anxiety for her western frontier and internal disorders prevented Russia from sending her best troops to the Far East. The long railway journey was detrimental to efficiency and discipline. Lack of military spirit among the older reservists. Depletion of the combatant ranks. Shortage of officers. Defective technical equipment. Premature declaration of peace.

Volume II. Chapters IX. and X.—Reasons for Russian failure (continued):—

Want of uniformity in training of troops, especially in the Kiev Military District under General Dragomirov. Faulty staff work. Neglect of intercommunication. Insufficient cavalry reconnaissance. Lack of co-operation. Employment of dense formations in the attack. Waste of ammunition. Neglect of the spade. The series of instructions issued to the troops by Kuropatkin during 1904 are given. They are full of elementary platitudes, and contain frequent allusions to bad leading on the part of officers and skulking on the part of the rank and file. Ignorance and general inefficiency of the reservists. Strategical error in not concentrating at Harbin until the arrival of reinforcements. Evil influence of seditious propaganda among the troops. The Russian troops were unfamiliar with mountain warfare. Units were below strength owing to the large number of men employed on non-combatant duties, and various pretexts found for quitting the ranks. Drafts arrived too late.

Strained relations between the Commander-in-Chief and corps commanders. Disregard and wilful contravention of orders. General Grippenberg specially censured in this respect.

The defects of the officers are enumerated. Higher commanders showed lack of initiative and ignorance of tactics. Regimental officers unable to read maps. Regular officers were, as a rule, brave but ignorant. Ensigns of the reserve proved very unsatisfactory and lacked military instinct. Those promoted from the ranks for distinguished service were excellent.

General Staff officers did good work, but were not sufficiently in touch with the troops.

As regards the rank and file, those serving with the colours were thoroughly reliable. but many of the reservists, especially second category men from large towns, were difficult to handle.

The war was unpopular. Lamentable indifference of the civil population. Thousands of idle students unwilling to enlist. Hostility of the social revolutionaries.

Kuropatkin's farewell address to the officers of the 1st Manchurian Army is given at length.

Chapter XI.—Measures suggested for improving the army.

The principal reforms advocated are*:—

(1) The amelioration of the material position of the officers.
(2) Inducements to N.C.O.'s to extend their service.
(3) Means for keeping reservists in touch with the army.
(4) Relieving the private soldier from non-military duties.
(5) Increasing the proportion of sappers in a division.
(6) Reducing the proportion of guns to rifles in a division to 3 per 1,000.
(7) The formation of depôt battalions for each regiment on mobilization.

As regards higher organization, the author advocates having 3 infantry divisions in an army corps, each division consisting of 2 infantry brigades, a regiment of artillery (4 batteries of 12 guns each) a sapper battalion, a telegraph company, and 2 squadrons of cavalry besides transport company, parks, hospitals, bakeries, &c.

For the composition of a cavalry division he recommends 3 cavalry brigades and a horse artillery battery of 12 guns. Two batteries of howitzers (12 howitzers to each battery) should be allotted to each army corps as corps artillery.

The failure of the cavalry in the war was due to bad leading. The junior officers were, as a rule, good, the field officers moderate, and the generals, with few exceptions, bad.

Chapter XII.—Recapitulation of the causes of the failure of the Russians. Improvements made during the war to the Siberian railway. Carrying capacity raised from 2 to 12 pairs of military trains in 24 hours. The Russian army had reached a strength of 1,000,000 men when peace was declared, while the Japanese were then at the end of their resources.

Chapter XIII.—Introduction and conclusion to Volume III. A recapitulation. Difference of opinion between Kuropatkin and Viceroy Alexeev as to the strength of the garrison required for Port Arthur.

Disposition of the Russian troops in the Far East in March, 1904. Premature engagement with the enemy by General Zasulich on the Ya-lu in direct contravention of Kuropatkin's orders. Zasulich's excuse that he thought he could defeat the enemy. Kuropatkin advocated concentration of forces in Manchuria, and discouraged the relief of Port Arthur.

Account of the fighting at Liao-yang and on the Sha-Ho. Mishchenko's raid on Ying-k'ou. Battle of Mukden. Causes of the Russian defeat. Kuropatkin blames himself.

Appendices.—I. The Royal Timber Company. II. The breakdown of the Russian unit organization and system of distribution.

The Russo-Japanese War. A help to study. (Der Russisch-Japanische Krieg, Ein Studienbehelf.) By Johann Meister, Captain 24th Infantry Regiment. 34 pp., with 1 general map. Vienna, 1909. Seidel. 1/7.

This pamphlet contains a *précis* of the chief events of the war. The author has endeavoured to give an uninterrupted account of the principal occurrences of the Manchurian campaign and to unite them into one picture, so that the student may possess a clear idea of its main features before proceeding to a study of more detailed works. In this he has succeeded, his style is clear and concise, and the book appears to fulfil the object for which it was written. The spelling of the place names may perhaps cause some difficulty to those who are only accustomed to that adopted in British official publications. The pamphlet closes with an excellent summary of the lessons of the war.

The Russo-Japanese War, Second Volume (Der Russisch-Japanische Krieg Teil II.). By General von Lignitz. 132 pp. (numbered 144-276), with 8 appendices, 18 illustrations in text, 8 maps, and a full table of contents. 8vo. Berlin, 1909. Vossische Buchhandlung. 2/-.

This volume deals with the events of the war from the landing of the Japanese in Manchuria up to the eve of Liao-yang. The first few pages contain a history of the defences (existing and projected) of Port Arthur and the Chin-chou position between the date of the Russian occupation and the Russo-Japanese war. The Chin-chou position is described in detail.

After a discussion on the advisability—from the Japanese point of view—of a siege of Port Arthur as opposed to a land blockade of the Kuan-tung Peninsula, the author proceeds to describe the battle of Nan-shan. According to him the Chinese inhabitants, exasperated by the demands made by the Russian troops during their occupation of Chin-chou and neighbourhood, revenged themselves by acting as pilots to the Japanese gun-boats, whilst others, who had been forced to work on the Nan-shan defences, betrayed the positions of the mines and of the wires connecting the latter with the observation stations. The author states that not a single Russian land mine produced any effect. He further points out that if the heavier Russian ordnance had been stationed on their left wing, the Japanese gun-boats could not have intervened in the action. He calls attention to the evil effects which premature exhaustion of artillery ammunition entailed for the defenders, and of the advantages accruing to the Japanese artillery through unity of direction. The handling of the Russian artillery is contrasted with that of the Turkish guns at Plevna.

The description of the fighting at Nan-shan is followed by brief *résumés* of the operations around Torres Vedras, Vicksburg, Düppel, Plevna, and Constantinople (1878), the tactics adopted in these cases being compared. As a result of the preceding studies the author discusses (on pages 174-175) the relative value of closed works and trenches, of advanced positions, trenches without parapets, entanglements, and mines.

Pages 176-182 contain a biographical sketch of General Kuropatkin. Next follows a *précis* of the negotiations preceding the war, of the plan of operations originally adopted, and a discussion on the relative merits of Mukden and Liao-yang as bases of operations. A brief description is given of Port Arthur and its neighbourhood, as well as of the various schemes for fortifying the town.

---

* Most of the suggestions have since been adopted.—*General Staff, W.O.*

In discussing the battle of Wa-fang-kou the author draws attention to the evil effects entailed by the faulty drafting of orders and the defective method of distributing them, on the Russian side. He likewise comments on the fact that the opposing commanders adopted identical plans, viz.:—to attack one of the enemy's flanks whilst holding him in the centre; but, whereas the Russian centre and right maintained an entirely passive attitude, all portions of the Japanese army participated in the offensive movement, thus bringing about a success. Several historical examples from mediæval and modern warfare are cited, the tactics in which resembled those of Wa-fang-kou.

Succeeding portions of the book deal with the hill fighting between the Ya-lu and Liao-yang, and in the Kuan-tung Peninsula; the naval operations, and the advance of General Oku. Following these come observations on mountain warfare, the protection of railways, and the *moral* of the opposing armies. The descriptions of Japanese tactics in hill warfare are clear and instructive. The section on *moral* is the most interesting part of the book. Anecdotes are given illustrative of the superb spirit of sacrifice pervading the Japanese army. The information which the author gives concerning the state of discipline amongst the Russian forces leads one to the conclusion that this more than anything else contributed to their overthrow. The fatal effects of unduly expanding the establishment of the Russian units on mobilization are repeatedly referred to. Statements are quoted from Russian and other authorities which present the Russian reservists in the most unfavourable light.

There are several printers' errors in the book. On page 190 "Port Arthur" is substituted for "Port Adams." On page 182 the order of the last five lines is changed.

The book is useful for a general survey rather than for a detailed study of this portion of the campaign.

Napoleon's Staff Officers. (Les états-majors de Napoléon). By General Derrécagaix. 650 pp., with 8 maps and plans. 8vo. Paris, 1906. Chapelot. 10/-.

The author points out that after the successive victories of Napoleon, the names of his great generals became household words and all the successes were rightly attributed to them. Many of the triumphs, however, could not have been gained without such men as Berthier, Andréossy, Belliard, &c.

Belliard, Murat's chief of staff, was *par excellence* a cavalry staff officer, and possessed many of the qualities in which Murat was deficient.

As staff officer of cavalry, Belliard's record of campaigns comprises the wars of the Republic, campaign in Italy, the Tyrol, Egypt, Austerlitz, Prussia, Poland, Spain, Russia, Saxony, and the war of 1814. It was only in 1815, when Murat was no longer available, that the Emperor gave him command of a corps.

Napoleon's Marshals. By R. P. Dunn-Pattison. 358 pp., with index. 8vo. London, 1909. Methuen. 12/6.

The careers of the 26 marshals of the First Empire contained in this volume are of more interest as a study of their characters and of the character of the Emperor than from an historical point of view. The events in which they took part are but briefly outlined in so far as they affect the subject of the biography. The character sketches are well drawn and are interesting. Portraits of 19 of the marshals add to the attraction of the book.

The Russian Conquest of the Caucasus. By John F. Baddeley. 518 pp., with 5 maps, 2 plans, and illustrations. London, 1908. Longmans, Green. 21/-.

The Caucasus may be described as a mountain chain 650 miles long by about 100 miles broad. In the west, a forest region stretching down to the Black Sea, the Cherkess tribes waged desultory war against Russia from the end of the 18th century till 1864. In the east, the inhabitants of the forests of Chechnia and of the mountain plateaus of Daghestan defended their country nearly as long and with a larger measure of temporary success. In the centre the local tribes never gave serious trouble, and so the Georgian road, the only line by which the Russians could move south to the help of their Georgian allies beyond the great range, remained in Russian hands and the eastern theatre of war was sharply divided by a strip of territory, some 140 miles wide from that in the west.

This book gives an interesting connected account—the first complete account to appear in either Russia or England—of the operations in the eastern theatre, "the wars of the left wing" as they are called by Russian writers.

In 1801 Georgia was annexed by Russia. The following 28 years were occupied by wars against Persia and Turkey, and it was in 1830 that the Russians first seriously applied themselves to the subjugation of the hill tribes. In 1834 Shamil, as third *Imam*, placed himself at the head of the movement called Muridism, which, while originally purely religious, was developed for patriotic purposes to unite the tribes against the Russian invader.

Up till 1845 the Russians confined their operations to isolated expeditions which produced no lasting impression. In 1845 Prince Vorontsov first initiated the policy of advancing the Russian lines slowly and steadily towards the centre of the disaffected district and there stifling the revolt at its heart. This policy at length succeeded, and Shamil was surrounded and taken prisoner at Gunib on the 6th September, 1864.

The resistance of the mountain tribes of the Caucasus was the most formidable obstacle that Russia has yet met in her expansion towards the Middle East. Her subsequent advance through the level plains of Trans-Caspia to the northern frontier of Afghanistan has been accomplished with comparatively little loss.

The reader cannot fail to be struck by the remarkable resemblance of these mountain tribes to the Pathans on our own North-West Frontier in India. Both are brave, proud, hospitable; both are alike in their fanaticism, passionate love of liberty, and in their harsh treatment of women. It is interesting to imagine, in the light of the difficulties in which Russia was involved in the Caucasus, what our experiences would be in India, were it decided to advance the present administrative boundary up to the Durand line and bring the border tribes under our direct rule.

The description of the various engagements is interesting. In the northerly district of Chechnia the operations consisted of wood fighting. The Russian columns moved with patrols and scouts thrown out on all sides and camped at night in square formation, with infantry and artillery on the flanks and cavalry and transport in the centre. The Chechens constantly harassed the flank guards but seldom succeeded in reaching the main column. They placed their main reliance on the beech woods of the country and were eventually conquered more by the axe than by the sword. The *auls*, or villages, of Daghestan were built on sites where they could not be commanded from more elevated points within range of the guns then in use. They could be subdued only by storming, and, as the Murids fought to the last and the houses were arranged to enfilade one another, this storming was a formidable business.

The Rumanian Army, as constituted by King Charles. (Die Rümanische Armee, die Schöpfung König Carlos I.) By Freiherr von Hammerstein-Gesmold (German General Staff). 116 pp., with 6 sketch maps. 8vo. Berlin, 1909. Mittler. 3/6.

The Rumanian army as now constituted owes much to the personal interest and initiative of King Charles. When the latter was elected Prince of Rumania in 1866, the army was undisciplined and untaught, the officers were "more at home in the salon than on the parade ground," while there were but 15,000 rifles in the country, only a few antiquated French bronze guns for the artillery, and empty arsenals.

The change wrought by 1877-78 is evident from the part played by the Rumanian army in the Balkan campaign of that period, including the siege of Plevna, the incidents of which are fully described in the present book, as also the constitution and organization of the various armed forces as they now exist in the country.

Redvers Buller. By Lewis Butler. 115 pp., with index. 8vo. London, 1909. Smith, Elder. 3/6.

An interesting account of 43 years spent in the service of his country showing the capacity for organization and determination of this distinguished soldier and the kindly forethought displayed at all times, which made him so universally popular with those who served under his command.

Although containing an account of Sir Redvers' work and services in India, Canada, Egypt, South Africa and other parts of the world, that portion of the work referring to the late South African campaign is of special interest and shows clearly the difficulties with which he had to contend. The admiration for, and sympathy with, his soldiers is well shown in the letter to his wife, written immediately after the relief of Ladysmith, a facsimile of which is produced.

POLITICAL.

Prince Bülow and the Emperor William II. (Fürst Bülow und Kaiser Wilhelm II.). By Rudolf Martin. 287 pp. 12mo. Leipzig. 1909. Bruno Volger. 4/-.

This book is a very severe criticism on the management of German politics by Prince von Bülow, especially as regards his conduct in the affair of the famous "interview" which appeared in the "Daily Telegraph" of November, 1908.

The author asserts that it was Mr. Harold Spender who compiled the "interview" in question, that the document was submitted by the Kaiser to Prince von Bülow for a report on its contents, and that the latter was guilty of grave negligence in failing to examine it. The interview, says Herr Martin, never really took place, but is a combination of alleged conversations of the Emperor in the course of his residence at Highcliffe in 1907. The version of these conversations given in the "Daily Telegraph" "interview" is far from authentic, and Mr. Harold Spender's information was evidently not obtained at first hand, but more probably from German sources.

The first chapter, which is entitled "Bernhard von Bülow in world politics" contains an account of the Chancellor's political career.

The writer contends that, while everyone must agree that von Bülow is one of the most accomplished statesmen of the present day, yet his management of political affairs has not been remarkable for its success. The most prominent features of the Chancellor's term of office are described as the dislocation of the Imperial finances, the diminution of the national wealth by the granting of large loans to Russia, the revolt in South-West Africa, and the slow progress in the development of the navy.

He further states that the November events have resulted in diminishing the esteem in which the Kaiser has hitherto been held by his subjects.

The political state of Germany, before the November events, is dealt with in detail in the second chapter of the book. Herr Martin then depicts the events of the first few years of the present Emperor's reign when Prince Bismarck was Chancellor. Next follow some interesting passages regarding the Kaiser's abilities, tendencies, opinions, his religious sentiments, and his endeavours to further the cause of art and science. He has given special attention to the development of the navy, and it is to a great extent due to him that the shipbuilding law, extending to the year 1917, was adopted in 1900.

The Kaiser, says Herr Martin, has from the beginning of his reign fully comprehended the value of Heligoland. Had Great Britain retained Heligoland in her possession she would have been able to blockade the mouth of the Elbe as well as that of the Weser, but thanks to the Kaiser's foresight, Germany will now be able to make use of that island as a point of support in time of war with England or with France. Heligoland will, he thinks, gain enormously in value with the expansion of Germany's aerial fleet.

The Kaiser made the greatest mistake of his reign, according to Herr Martin, in neglecting to accept the resignation of Prince von Bülow in October, 1908.

It is this forbearance, he asserts, which has done most injury to his power and which has exposed him to most unjust criticism. From the 17th November, 1908, it appeared to the world as if public power had been transferred from the Kaiser to the shoulders of the Chancellor. But even to-day, thinks Herr Martin, if the Emperor would only consent to the dismissal of Prince von Bülow he would once again enjoy his hereditary and constitutionally guaranteed Imperial rights.

All those, he concludes, who are desirous of a constitutional government should then insist upon an immediate change in the Chancellorship.

The Balance of Power in Europe (Le principe d'équilibre et le concert européen). By Charles Dupuis. 513 pp. 8vo. Paris, 1909. Perrin. 6/3.

The author divides his book into two parts. In the first he shows how the balance of power in Europe has been for three centuries past a guiding principle in European politics. He explains how the idea evolved that forces should be so grouped as to make it impossible for one State or group of States to dictate the issue of events to the remainder of Europe, and draws illustrations from the situation in Europe in 1814.

The second part of the book deals with the concert of Europe. It is explained that Napoleon's conquests led to the recognition of the necessity of a concert of the European Powers, and how the initial fruitless attempt to rule Europe by a permanent international government had good results in facilitating the discussion, and the solution by mutual concessions, of international difficulties.

The following situations are then discussed in detail:—

The independence of Belgium in 1831.
The Eastern crisis in 1839-41.
Eastern question during the Second Empire.
Russo-Turkish war, and the Treaty of Berlin.
The situation in Egypt. the Congo Free State and Morocco.

The Entente Cordiale (L'Entente Cordiale). By M. Joseph Perreau, formerly Professor of Military History at Saint Cyr. 200 pp. 8vo. Lyons, 1908. Legendre & Co. -/10.

This book is really a short history of the British Empire, with special reference to its past and present relations with France. The author deals with the British system of government, religion, agriculture, commerce, navy, &c., and shows that there are no real points of serious antagonism between England and France. He traces the long course of disputes and wars between the two countries, and comes to the conclusion that they have now definitely decided to make friends and forget past grievances, in order to make common cause against the real and dangerous enemy of both, namely Germany.

The Second Intervention of France and the Siege of Antwerp, 1832 (La seconde intervention française et le siège d'Anvers, 1832). By André Martinet. 300 pp. 8vo. Brussels, 1908. Société Belge de Librairie. 5/-.

The author discusses the "Treaty of 24 Articles," concluded in November, 1832, by which the Great Powers recognized the independence of Belgium, and the general European war, which had been threatening for eight months, seemed to be avoided. The remainder of the book shows to what extent these hopes were realized and events are followed until the capitulation of Antwerp.

Turkey in Revolution. By Charles Roden Buxton. 285 pp., with 33 illustrations and a map. 8vo. London, 1909. T. Fisher Unwin. 7/6.

The part played by the Turkish army in the revolution in Turkey as described in Mr. Buxton's book should be of interest to military readers.

The Rise and Progress of the South American Republics. By George W. Crichfield. (2 volumes.) 1,250 pp. 8vo. London, 1909. T. Fisher Unwin. 25/-.

This work deals with the history and present condition of the States of South and Central America. The author's verdict is unfavourable to Spanish America, and he is of opinion that the States of Central America and those of the northern portion of South America are wholly unfit to govern themselves. He goes further and urges that it is the duty of the United States to take over the government of these countries and to put an end to the chaos and anarchy which, according to his views, reign there.

There are many points of interest in the work, not one of the least of which is the author's denunciation of the Monroe doctrine. He is an American, and one who has the utmost confidence in the future of America, but he fully realizes the merits and achievements of other countries, especially of England and Germany. Of the United

States, he says:—"The whole American continent, except Canada, ought to be ours, and I believe it will be. If I see aright, the finger of destiny points that way." Of Germany he says:—"Germany needs colonies, she ought to have them, she must have them. . . . . . It seems certain that the future holds promise of a career of imperial glory, rivalled only by that of the United States and Great Britain. The solid, dogged stability and solidity of the German, his strict discipline, industrial as well as military, the practical and technical nature of his education, his daring, enterprise and phlegmatic patience, and, above all, his freedom from the baneful influence of impractical theories regarding the alleged political rights of these semi-barbarous peoples, make him peculiarly fitted for carrying the banner of civilization into the countries where darkness now reigns." He also says:—"Germany and the United States are young giants which have not yet arrived at a realization of their real strength. They are fountains of energy, Atlases on whose shoulders might rest a world."

In spite, however, of the author's praise of the United States and Germany, and of the great future which he predicts for them, he reserves the highest eulogy for England. Of our country he says:—"All civilized men owe to England a debt of gratitude which is immeasurable. She has been, and is to-day, the mightiest factor in the world for good. . . . Mother of nations, home and birthplace of law and order and progress, England stands to-day a supreme factor in the development of the world. . . . Incomparable England! Since the sun commenced to shine no other nation has done the world so much good. Where the English flag flies there is peace, prosperity, safety, freedom." Such words are pleasing from the pen of an American, and still more pleasing is his praise of British rule in India, which is generous and unstinted.

Though it is not possible to agree absolutely with all the author's views, the work is of considerable interest, and a valuable contribution to the literature on the subject of the American continents.

America as a World-Power. By John Holladay Latané. 350 pp. and 7 maps. 8vo. New York and London, 1907. Harper and Brothers. 8/-.

This volume is the last of the series entitled "The American Nation," and it deals with the history of the United States from the time when the American people began to take an absorbing interest in the Cuban insurrection.

The opening chapters are devoted to the various causes which led up to the Spanish war of 1898, and the ensuing military and naval operations are then briefly described.

In the succeeding chapters the effect of the campaign on the spirit and policy of the American people is dealt with, and the author shows how the war gave to the people of the United States new interests and new purposes.

The controversy which took place over the acquisition of the Philippines is described, including a reference to the extent to which the situation in China influenced President McKinley, and his Cabinet, in deciding to retain the islands.

American diplomacy in the Orient is next discussed, and the author points out how the rivalry of the world-Powers in China, towards the end of the XIXth century, served to emphasize, more than ever before, the fact that commerce is the greatest of all political interests.

The Alaskan boundary question, the Panama Canal question, and the Monroe doctrine as affected by changed conditions, are then discussed, and in the concluding chapters the author touches briefly on the great administrative and economic questions, which, within recent years, have pressed for a solution in the United States.

Defence of the Empire in Australia. By Colonel Hubert Foster, R.E. 52 pp. Fo. London, 1908. Hugh Rees. 1/6.

Colonel Foster's pamphlet contains a series of eight articles which together form a most valuable exposition of the true principles of Imperial defence.

The dependence of an Empire such as ours upon sea power is very clearly pictured, but Colonel Foster has been careful to show that there are limitations to the powers of a navy, and that a conclusive result can only be attained by the action on land of military forces.

The manner in which Imperial co-operation is urged and in which the advantages of the offensive over the defensive have been shown should commend the book to Imperialists and soldiers, not only in Australia but throughout the Empire.

NAVAL.

The Naval General Staff (Le grand État-Major Naval). By Lieutenant de Vaisseau Castex. 300 pp. 8vo. Paris, 1909. Lavauzelle. 3/-.

The author emphasizes the importance of the General Staff, and shows how the hours of preparatory work carried out by it in peace time will result in marshalling all the naval force of a country to the best advantage when the horizon becomes clouded.

He takes as his model the Prussian General Staff, and traces the successive steps which were necessary before it was realized that a General Staff could give irresistible momentum to a National Army, and corresponding political force to a nation. He shows how the idea had to be broken down that a general would not carry out a plan pre-arranged independently of him. The author then speaks of the institution of the first big manœuvres in 1829, and of the first mobilization scheme in 1830. A test of the mobilization scheme took place in 1849 for operations in Baden and the Palatinate, and it was found to take three weeks to mobilize the army corps.

The author then deals with all the functions of the General Staff in detail. and the particular duty which falls to each of the sections into which it is divided. He comes to the conclusion that the General Staff should be left free to carry out its great *rôle*, and that for this purpose all administrative details should be withdrawn from it, leaving only such matters as strategy and tactics, mobilization, operations, and movements of troops.

A General Staff is, in the opinion of the author, as essential for a navy as for an army.

CAVALRY.

Machine Guns with Cavalry. Vol. I. (Mitrailleuses de Cavalerie). By J. C. Lavau, Captain Commandant of the 15th Dragoons. 657 pp. and about 100 engravings in the text. 8vo. Angers, 1908. Siraudeau. 6/7.

This book is divided into two parts. The first part deals with the period 1903-4 and is practically a verbatim reproduction of articles contributed during these years by the author to the magazine called *Revue de Cavalerie.*

The latter portion of the book is concerned with the period from 1904-1908.

The first part consists of four chapters. In the opening chapter the author discusses the position (in 1903-4) as regards machine guns with cavalry in the various foreign countries, from which it appears that at that time the German, British, Austrian, Belgian, Danish, Swedish, Norwegian and Swiss cavalry were actually in possession of machine guns or were about to receive them. The author expresses the opinion that a mistake was made by all foreign nations at this time in looking on machine guns as light artillery and in making the *personnel* of the machine gun detachments too large, whereby, he thinks, the mobility of the cavalry was seriously affected. In Chapter II. the merits of the Hotchkiss and Maxim guns are compared, and extracts from a diary relating to the march of a Hotchkiss gun detachment during the South African war are given. The third chapter contains the author's ideas regarding a suitable organization for machine guns, which is given in the form of a proposed official regulation on the subject. The fourth chapter is by far the most interesting of the first part of the book, and, in addition to some notes as to the tactical employment of machine guns, discusses the question as to whether machine guns should be carried on an animal's back or on wheels, and enters into various other points in connection with the organization and *personnel* of machine gun detachments. At the end of the chapter the machine gun tactics employed in America, Germany, England, Austria, and Switzerland are discussed.

In the second part of the book, which, as already mentioned, deals with the period 1904-1908, the writer once more reviews the position as regards machine guns with cavalry in various armies, and explains the state of affairs in Germany, America, England, Austria, Belgium, Bulgaria, China, Denmark, Spain, France and Japan.

The general conclusions at which the author arrives are—

(1) Cavalry must rely on the *arme blanche*, and therefore necessarily its fire power must be small.
(2) To increase the fire power of cavalry by using them as mounted infantry is fatal to the efficiency of cavalry.
(3) By adding to cavalry light machine guns which can be carried on a horse's back the necessary fire power is added to that arm without interfering with the mobility or the spirit of cavalry.

Drill Regulations for the Cavalry (Exerzier-Reglement für die Kavallerie) Official. 214 pp., with diagrams in text. 12mo. Berlin, 1909. Mittler. 1/6.

These regulations are dated 3rd April, 1909, and supersede those of 1895.

The book has been reset and almost entirely rewritten. Part I. now deals with mounted work, dismounted work being relegated to Part II.

As in the Drill Regulations for the Infantry issued in 1906, the spirit of the offensive appears to be the key-note of the manual. This is sufficiently indicated in the last paragraph of the introduction which reads as follows:—

> "Cavalry must always seek to execute their task by offensive action.
>
> "It is only when the lance can no longer be employed that the carbine is to be resorted to.
>
> "No squadron must await an attack, but must always seek to anticipate the enemy in this respect."

From the above it would seem that shock action is still to be the chief object aimed at and that dismounted fire action is to be regarded as subsidiary to it.

The drill formations in mounted work with the exception of the introduction of "regimental double column" and "brigade double column" have undergone but little change.

A brigade may be formed of two or three regiments and may have a proportion of horse artillery and machine guns allotted to it.

The cavalry corps is recognized and may consist of two or more cavalry divisions.

In dismounted fire action the squadron is the unit and one-half or three-quarters of the men may be dismounted. In the first case the led horses are termed mobile, that is, they can be moved at the trot or gallop. In the second case they are still mobile, but can only be moved at a walk, with the horse holder dismounted leading his four horses and carrying the four lances strapped together over one shoulder.

Dismounted fire action is no longer to be confined to the defensive, but, as when mounted, the offensive is enjoined. The employment of mounted and dismounted action in co-operation is recommended.

Part III. dealing with the "Combat," is entirely new and embodies the most modern German ideas on the use of cavalry in the field.

French Cavalry Field Service Regulations (Instruction pratique sur le service de la Cavalerie en campagne). Official publication issued by the French War Office. 313 pp. 8vo. Paris, 1908. Lavauzelle. -/10.

This is the fourth edition of this book, which is corrected up to 1st September, 1908. Since the previous edition was issued in 1902 certain changes have been introduced in the regulations for the French cavalry.

The following is the fresh matter contained in the new edition:—

Page 54.—There is a footnote calling attention to the alteration made in the Infantry Field Service Regulations by a ministerial "notification" dated 25th May. 1908, according to which the rules for the employment of cavalry with the outposts are modified. The text of the "notification" is given on page 301.

Page 58.—There is a footnote pointing out that recently a new body of men have been recruited who are known as "Infantry Mounted Ground Scouts."

Page 93.—There is a footnote to the effect that the fighting train of a cavalry division will only include a portion of an ambulance.

Page 144.—A footnote states that each cavalry soldier now carries 66 cartridges in clips (48 for cuirassiers). Each cavalryman armed with a rifle carries 30 rounds revolver ammunition (18 for telegraphists).

Page 147.—There are certain modifications in the Table of Rations. For example, salt pork, coffee tablets, and beer may now be issued, whilst neither the issue of potatoes or dripping is mentioned. There is also a difference between the quantities of several of the articles now issued as compared with the former scale.

Page 148.—A new kind of ration called a "railway ration" (*vivres de chemin de fer*) is introduced which, as its name implies, is intended for the soldiers' use whilst travelling in the train.

Page 180.—The penultimate paragraph is new. This is to the effect that during a halt the gendarmerie are responsible for the sanitary condition of, and the maintenance of order in, cantonments and their outskirts.

Page 251.—A footnote states that cavalry are now provided with the material for making the Veyry bridge.

Pages 299, 300.—In these pages the text is given of the provisional regulations (dated 24th January, 1908) regarding the use of "infantry mounted ground scouts" (*éclaireurs de terrain montés d'infanterie*).

The object of this new body of men, who are recruited from the cavalry, is to afford further protection to infantry when marching, or halted, or fighting.

Pages 301 to 303.—As already stated, the text is here given of the War Office "notification" of 27th May, 1906, regarding the modification of the duties of the cavalry attached to the outposts.

The Dutch Cavalry Training Manual for 1908 (Ontwerp-Cavalerie-Reglement 1908. II.). Official. 218 pp. 12mo. Breda, 1908.

This book, which dates from the year 1908, marks an important advance in cavalry training. The old principles have disappeared, and only what is suitable for war has been retained.

The following are the chief principles:—

(*a*) Cavalry commanders must familiarize themselves with all the incidents of an engagement, in order to appreciate the importance of the different formations, and to judge the best moment for a change of formation.

The suddenness and short duration of the cavalry combat make it essential to preserve simplicity in the methods of command, since there is no time for formal movements. The necessity of deciding when the moment has come to deploy, and the right time for increasing the pace absorbs the commander's whole attention, and leaves him no time to think about details.

It is therefore laid down that the junior commanders may decide for themselves on the method by which they will carry out the prescribed change of formation.

The necessity of "*surprise*" dominates all cavalry tactics, and hence all changes of formation, with scarcely an exception, are carried out at an increased pace.

(*b*) Forming line.—The deployment of the squadrons takes place, as a rule, on either side of the unit of direction. When a regiment is in line the squadrons do not march quite on the same alignments so as to avoid the danger, in case it is desired to deliver an attack, of irregularity in the dressing of one squadron being carried on to the other squadrons.

When larger units are deploying into line, each commander causes his own detachment to form line as soon as space is available. On the field of battle line is formed when the direction and object of the attack are known.

(*c*) Initiative of subordinate commanders.—The manual endeavours to stimulate the initiative of the subordinate commanders as much as possible. This is seen in the following points:—

(1) In column of troops the troop commanders take the interval they require without any further order from the squadron commander, if the ground allows of it.

(2) If the intention is to outflank the enemy, or if measures are to be taken to effect this, the troop commanders act quickly and decisively on their own initiative.

(3) The column of troops is regarded as an unsuitable formation for moving under artillery fire, or under unexpected fire of infantry, but it is well adapted for changes of direction and for avoiding difficult ground.

(4) The attack formation in extended order is suitable for attacking against artillery, vehicles and infantry. If the groups, laid down for reconnoitring under a hostile fire, and consisting of four or five troopers under a sergeant, have been formed, this will greatly contribute towards the success of an attack.

(5) Dismounted action is only to be used when it is quicker and more suitable for the object aimed at than mounted action.

The Course of Training for the Remount (Der Gang der Ausbildung des Remontepferdes). 4th edition. By General of Cavalry Freiherr von Troschke. 313 pp., with woodcuts in text. 8vo. Leipzig, 1908. Otto Lenz. 5/6.

This book has been written to supplement the Equitation Regulations for the Cavalry. The first and second editions were published in 1869 and the third in 1877. The reprint of the 1882 Equitation Regulations in 1908 was the probable incentive for the revision of the work.

The author deals with the subject in great detail and in a very comprehensive manner. In the early pages the conformation and characteristics of the various types of animal met with, and the qualifications required for the men selected for remount training are entered into. The breaking of the horses mounted and with lunging reins is then fully discussed, and the book concludes with a short chapter on the several phases of the two years' course of training of the remount and the work done in each phase.

Sixty Years of the Austro-Hungarian Cavalry, 1848-1908 (Sechzig Jahre oesterreichisch-ungarische Kavallerie, 1848-1908. By four different authors). 59 pp., with frontispiece. 8vo. Vienna, 1908. Karl Konegen. 5/2.

1. The period from 1848 to 1908 is divided into five sections, each handled by a different author.

2. The book is not a work of military history; it describes the gradual evolution of the present Austrian cavalry from the old cuirassiers, dragoons and light cavalry.

3. First period (1848-49), by Captain von Ravelsberg, 8th Dragoons.

In 1848 the strength of the Austro-Hungarian army was 400,000 men, of whom some 49,000 were cavalry. It was divided into cuirassiers, dragoons, light horse, hussars, and Uhlans (lancers). Each of these corps had its own drill and system of training. The heavy cavalry were intended to turn the scale of a battle by well-timed charges; the light cavalry were intended principally for reconnaissance and outpost duty. All except the lancers were armed with carbines, but fighting on foot was seldom attempted.

4. Officers were promoted by purchase. The men served for eight years. They were drawn from the lowest classes by local conscription.

5. Second period (1850-59), by Captain Kerchnawe, General Staff.

After the campaigns of 1848-49 the cavalry was re-organised even more thoroughly than the infantry. The strength of the heavy cavalry was increased, and the "light horse" converted into Uhlans. Numerous bodies of yeomanry were raised, such as the Croatian, Servian and Rumanian Corps. In 1859 these amounted to 3.400 sabres, besides 4,000 irregulars. The strength of the regular cavalry in 1859 was about 64,000 sabres.

6. The number of patterns of sabre was reduced to two, a heavy and a light pattern, and a rifled percussion carbine was issued to all except Uhlans.

7. Third period (1860-66), by Major Anton Semek.

After the war of 1859 the first act of the newly-created Parliament was to economize by cutting down the army, and especially the cavalry. It was considered that cavalry could not face the infantrymen armed with the new rifle, and that a few mounted men per division, for reconnoitring purposes, would suffice. Thus by 1866 the cavalry had been reduced from 64,000 to 39,000 sabres, including depôts, so that on the outbreak of war in that year only 28,000 men were fit for service.

8. Carbines, which had been practically abolished and replaced by pistols, were re-introduced in 1866, but were not issued till just before the war. Pioneer troops were formed in 1866, and equipped with tools and explosives.

9. Up to the battle of Koeniggraetz the heavy cavalry were held in reserve, and were brought into action only to decide the fate of a battle. After that date they were called upon to perform the same duties as light cavalry. In the campaign the reductions made by the Radical Parliament had left the cavalry too weak to be efficient as a whole, in spite of their individual excellence.

10. Fourth period (1867-81), by Major Anton Semek.

The unsuccessful campaign of 1866 led to far-reaching reforms. Liability to military service was extended to all classes. Parade and ceremonial gave place to war training. In the cavalry, the cuirassiers, which had come to be looked upon as ceremonial troops, were converted into dragoons, and the distinction between light and heavy cavalry was abolished. All regiments were organized alike, namely, with six service squadrons and a depôt. In war time a reserve squadron was added. Bands, ensigns and ensign-bearers were abolished. A central school of equitation was formed.

11. All regiments were armed with breech-loading carbines, even the Uhlans receiving 48 per squadron, and revolvers were issued to non-commissioned officers. Dismounted fire training was thoroughly carried out. The cavalry regulations of 1870 and 1875 provided for the employment of large bodies of cavalry acting independently in front of the army.

12. Fifth period (1882-1908), by Captain Kerchnawe.

Except for the abolition of the lance, no changes of importance were made between 1882 and 1891. In the latter year the reserve squadron was replaced by a pioneer troop, telegraph troops, and remount troop. The magazine carbine was issued to all regiments, and was replaced in 1895 by an improved pattern.

13. Of late years the cavalry have been given machine guns, and a cavalry machine gun on an armoured motor car was successfully tried in 1906. But the expense of this weapon will prevent its introduction on any large scale. Cavalry bridging trains have been formed, "swimming sacks" issued in the proportion of 10 per squadron, and the field telegraph equipment has been increased and improved.

14. The formation of five cavalry divisions in peace time has enabled training, especially reconnaissance and dismounted action, to be carried out on a more extended scale. The Landwehr cavalry, which, up to 1883, hardly existed in peace time, are now a well-trained and serviceable body.

15. Conclusion.—Sixty years of progress have given us a magnificent body of cavalry. Yet it is far from perfect. A Radical Parliament has cut down its strength to the equivalent of 293 service squadrons, or 48,000 men. The horses are overweighted and the supply of ammunition insufficient.

Letters of an Old Cavalry Officer (Lettres d'un vieux cavalier). By General Donop. 2 volumes. 320 pp. 8vo. Paris, 1908. Berger-Levrault. 5/-.

This work is an eloquent plea for the proper treatment of cavalry and for a recognition of their true *rôle* in war. In France, as in other countries, there has been a tendency to interference in the training of the arm by men who have no real knowledge of its powers. General Donop shows that this policy has led to discontent and deterioration, and he vigorously condemns this ignorant meddling in his "Letters."

He points out that energy, dash and determination are the most essential qualities for cavalry; these qualities cannot be acquired by means of bookwork and indoor study alone, but are the result of long and constant practical experience, tempered by scientific and theoretical study of the history of war and of the cavalry arm in particular.

He inveighs against the absurd idea cherished by so many non-experts, by ignorant civilians as well as by wrong-headed soldiers, that the tactical training of cavalry is a simple thing, merely a matter of ordinary common sense. He shows that such theories are wholly false and involve serious danger, especially to France, in view of the numerically superior and highly trained cavalry possessed by Germany.

General Donop was a dashing cavalry leader, but not a mere fire-eater; he believes in a happy combination of practical experience and physical energy with theoretical study and activity of mind, and endeavours to show that the cavalry officer should combine these qualities. He must not be a theoretical bookworm or a regulation-loving bureaucrat swathed in red tape, nor, on the other hand, must he be that terrible thing, a mere so-called "practical soldier," with a firm belief in his own knowledge and experience, as gained in some remote campaign against savages, and with a lordly contempt for the scientific study of his profession, for the lessons of past wars and the teachings of great soldiers.

ARTILLERY.

Artillery in Action (Artillerie dans le combat.) By Captain Bourguet. 110 pp. 8vo. Paris, 1908. Chapelot. 2/2.

The author of this book is Orderly Officer to General Percin, commanding 13th French Army Corps, who has written a preface for him.

The object of the writer is partly to combat certain doctrines which are still held by French artillery officers. He finds, for example, that there are still officers who advocate the commencement of an action with an artillery duel which the author proceeds to show is useless waste of ammunition besides being tactically unsound. On the other hand, he considers that the batteries told off to keep down the enemy's fire (*contre-batteries*) must fire unceasingly at the particular objectives assigned to them. Special care must, however, be taken that these *contre-batteries* do not fire at any other objective otherwise their ammunition will not last. Another custom against which the author wishes to protest is the practice in vogue at schools of gunnery of constantly changing objectives and also of continually reducing or enlarging the front of objectives. Captain Bourguet scathingly describes the supporters of such methods as "musical conductors who wish to make the targets waltz." He adds that however excellent this form of "gymnastics" may be, it is no training for war.

The most interesting and convincing part of the book is that which is devoted to an urgent appeal to artillery officers no longer to consider themselves specialists and an independent arm. The author contends that the "separatist" feeling among artillery officers leads to want of co-operation between infantry and artillery on the battlefield, and he points out that an army in which want of co-operation between these arms exists can hardly expect to be successful in war.

Modern Field Artillery (Die heutige Feldartillerie). By Captain von Roskoten. German Artillery. 2 volumes, 448 pp., with 130 illustrations. Berlin, 1909. Eisenschmidt. 15/-.

This book deals principally with the construction of field artillery guns, carriages and ammunition. There is no attempt to go into scientific principles, but the different constructions adopted by various States and by various makers are described in detail and fully illustrated. The author confines his descriptions to mechanism in practical use, and novel devices which are still in the theoretical or experimental stage are not discussed. The section on ammunition is very complete, and full details of the latest types of field projectiles and fuzes are given.

Under the heading of "Technical Equipment," brief descriptions of rangefinders, telescopes, heliographs, and field telephones are given.

The most interesting portions are, perhaps, those dealing with the details of the Krupp buffer, and the description of the Krupp high explosive buffer on page 165.

Besides dealing with artillery equipment the book contains chapters on fire discipline, organization and tactics. The chapter on fire discipline consists principally of a comparison between French and German methods. The author prefers the latter as being less wasteful of ammunition. He is strongly in favour of time-shrapnel ranging. He considers the French method of indirect laying to be too elaborate, and less serviceable than the simpler German procedure.

The chapter on "Organization" is a comparison between the French 4-gun battery and the German 6-gun battery, to the advantage of the latter. Captain von Roskoten defends the German system of keeping only one wagon per gun in the first line, which shortens the columns and expedites deployment.

In the chapter on tactics the author shows a marked bias in favour of German methods. He acknowledges the value of the covered position, but condemns the tendency to seek protection at the expense of efficiency. Batteries must always be ready to quit their cover at the decisive stages of the combat. Great importance is attached to the artillery reconnaissance, which is thoroughly carried out in Germany. Single batteries must accompany the attacking infantry to close range.

Captain von Roskoten's work contains an immense amount of detailed information and is a valuable book of reference for all questions of modern field artillery equipment.

The History of the Royal Prussian Commission for Artillery Experiments (Geschichte der königlichen preussischen Artillerie-Prüfungskommission). By Colonel von Denecke. 120 pp., with numerous portraits. 4to. Berlin, 1909. Published by the Commission for Artillery Experiments. 7/10.

This book is brought out to commemorate the centenary of the founding of the Commission for Artillery Experiments in Prussia. It contains portraits of General von Scharnhorst, who was chiefly responsible for founding the Commission, and of many other distinguished soldiers who have been connected with it during the last 100 years. The book gives a short account, without entering into details, of the experiments which the Commission has carried out during the course of its existence from the days of smooth-bore ordnance down to the introduction of the 10-cm. gun of 1904, and the experiments with apparatus for measuring the recoil of guns.

STRATEGICAL AND TACTICAL.

Lessons from two Recent Wars. (The Russo-Turkish and South African Wars.) By General H. Langlois. Translated for the General Staff, War Office. 145 pp., with 4 maps. 8vo. London, 1909.

Though General Langlois wrote this book five years ago, it is still of considerable value, especially as the Manchurian war has proved the soundness of many of the doctrines enunciated, without refuting any of the principles laid down. The volume was written with a view to preventing French officers from forming incorrect and dangerous conclusions as the result of the war in South Africa. The author is one of a coterie of distinguished French military writers who have been and are striving to imbue their countrymen with the spirit of the offensive, which in their opinion was the cause of the German victories in 1870-71. The effect produced by the Boer war was to create a feeling in certain circles that the frontal attack had become impossible. As a result of this it seemed likely that French military opinion would veer round to something like its condition in 1870, when so many battles were lost by a want of initiative and a passive defensive attitude. General Langlois, therefore, set himself to combat these dangerous tendencies by exposing the fallacies of lessons derived from South Africa, further illustrating his contentions by means of examples from the Russo-Turkish war of 1877-78.

He wrote before the conclusion of the *entente cordiale*, so that his criticisms are not blunted by any desire to be polite to us. His tactical ideas, written before the Manchurian war, have been borne out by the success of the Japanese, who acted in accordance with his views. Throughout he lays very great stress on the value of the offensive, of initiative, of energy and of a determination to conquer; his doctrines are those of our training manuals, with special reference to certain points, which he has brought out with great clearness and ability.

The book is full of valuable criticisms and important lessons. It is divided into five parts; the first dealing with the Russo-Turkish war, the second with considerations regarding the teachings of the French drill book, the third with the Boer war, the fourth with lessons to be drawn from the latter, and the fifth with general considerations regarding present-day tactics.

The author's remarks on the Russo-Turkish war are valuable, especially in the way that they lead up to the discussion on the French drill book in Part II. of the work. This discussion deals more particularly with Skobelev's operations in the fighting about Plevna, with the development of the attack, the fire fight and the final assault; stress is laid on the importance of adequate artillery support to attacking infantry and the value of the moral factor is emphasized.

General Langlois divides the South African war into three periods:—(1) Before the arrival of Lord Roberts; (2) after his arrival; (3) after his return to England. He maintains that the actions fought by General Buller round Ladysmith, *e.g.*, Colenso, Spion Kop, &c., and by Lord Methuen at Belmont, the Modder River and Magersfontein, were conducted in defiance of the lessons of 1877-78, and indeed of all tactical rules; he enumerates the various mistakes committed by our leaders, and emphasizes more especially the want of co-operation by the artillery, the faulty notions as to the delivery of the decisive attack, the want of mutual support, the lack of energy, and of a determination to conquer. Having demonstrated the fact that our failures were due to these mistakes and not to the increased power conferred on the defence by modern improvements in fire-arms, General Langlois goes on to make it clear that Lord Roberts' operations, though successful, have little or no bearing on the tactics of European warfare, whilst the guerilla fighting of the third period can be entirely neglected. At the same time, however, he affirms his opinion that a decisive battle, however costly, would in the long run have proved far more economical in men and money than the cautious measures adopted by the British commanders.

Part IV. deals with the lessons of the South African War, and is an extremely able discussion. The author points out the danger of drawing false conclusions from the Boer war, where the circumstances were peculiar, and quite different to those obtaining in European warfare; where one side was practically composed of irregulars, whilst the tactical methods employed by its opponents were antiquated, vicious and irresolute. He shows that there is no reason to suppose that frontal attacks will be impossible in the future, with the aid of good leadership and with efficient artillery support; he deprecates the cult of mounted infantry, which he considers to be merely a cheap and bad form of cavalry, and whilst acknowledging the frequent necessity of dismounted action, urges that the *rôle* of cavalry has gained in importance, and that the horsemen of the future require more careful training and must be better riders than ever before. He goes on to deal with German and British tendencies after the South African war, and comes to the conclusion that the Napoleonic system remains the best; *i.e.*, to employ strategy to bring about a battle, during the battle to engage the enemy all along the line, but to drive home the attack at one point. Finally, he discusses our training regulations, compares them with the French regulations, and arrives at the decision that it was failure to observe the principles laid down in our training manuals that led to our checks and repulses in South Africa. He concludes with a few remarks *re* howitzers, heavy guns and pom-poms.

The final chapter, dealing with the evolution of tactics, enumerates a few important laws which have been established as the result of the improvements in modern firearms. General Langlois points out that these improvements tend to increase the value of the individual, as opposed to the power of mere numbers, and that energy, *moral*, and determination to conquer will play an even greater part in future wars than has been the case in the past.

The Surprise Attack by Sea as a Preliminary to a Campaign (Der Ueberfall über See als Feldzugseinleitung). By Lieut.-General A. von Janson. 144 pp., with 14 sketch maps and plans in the text. 8vo. Berlin, 1909. Eisenschmidt. 4/-.

The question of an invasion by sea is one of the most discussed topics of the present day. This is to some extent due to the important part played by the Japanese fleet in the recent war against Russia. In this book various oversea expeditions which have taken place in the past are dealt with and the lessons to be learnt from them are discussed.

Napoleon said: "To try and effect a landing in England without having command of the sea would be the boldest and most difficult operation that could be attempted." Nevertheless, the French expeditions to Ireland and Egypt prove that under favourable circumstances it is possible for a nation, not having command of the sea, to land troops.

The telegraph and other modern inventions prevent preparations for such expeditions being kept secret at the present day, but otherwise the author considers that the improvement in ships, armaments, &c., confer equal advantages on the assailant and defender. No modern ruler or general has given more attention to the question of invasion than Napoleon, and yet he was only successful once (Egypt). Even on this occasion, had not the French fleet been destroyed, it is questioned whether the expedition would have had any lasting results. Napoleon succeeded in transporting an army all the way to Egypt and yet hesitated to cross the Channel, because England had command of the sea. The author therefore concludes that what Napoleon, who was much more favourably situated, was incapable of doing, could not be done by anyone at the present day, and also that oversea invasion in Europe is practically out of the question. This theory appears to be confirmed by the Russo-Japanese war, when the Japanese hesitated to land on hostile territory until they had gained command of the sea, notwithstanding the fact that they had surprised their opponents both politically and strategically.

It is not considered that any Power could collect sufficient transports to carry, in one trip, an army of sufficient size to bring a war to a decision. The author considers that railways are a great safeguard against such landings, and that a country which has made the necessary preparations for its own defence in peace time has nothing to fear from oversea attacks. This he considers a much greater safeguard than international conventions.

General Carl von Clausewitz on War. Translated by Miss Maguire, with notes by T. M. Maguire. 161 pp., with 2 maps. 8vo. London, 1909. Clowes. 7/6.

This book consists of a series of articles published originally in the "United Service Magazine."

The selected extracts from this distinguished authority on the art of war have been freely translated, and in many instances only a *précis* of the original text is given. Interspersed throughout the articles are copious comments and notes by Mr. Maguire, who has drawn on British methods and military history, as far as possible, by way of illustration.

The French Frontiers (Frontières Françaises). Vol. II. By Gustave Voulquin. 80 pp., with 9 maps. 8vo. Paris, 1908. Bibliothèque Larousse. 1/-.

The book consists of three volumes. The first deals with the northern and eastern frontiers, second line positions, and the defence of Paris. The second deals with the south-eastern frontier, and the third with naval bases, frontier fortresses, and the defence of the littoral of France, Algiers and Tunis.

In all cases the natural defensive capabilities are considered, next the administrative divisions, and then the artificial fortifications are dealt with in detail. Plans of the various defensive positions are given, when these are important.

Studies of War (Studien über den Krieg). Part III. Strategy. By General of Infantry J. von Verdy du Vernois. 99 pp., with 3 maps in text. 8vo. Berlin, 1909. Mittler. 2/6. (For Part III., 7th number, *see* p. 50, No. 6.)

This is the eighth number of the series and the third section of the second group dealing with strategical operations. The subject dealt with in this number is the "Strategical Concentration," with comments on von Moltke's appreciations on the question.

The author points out in the introduction that concentration must be considered under the headings of strategical and tactical, and illustrates his arguments from the campaigns of 1859, 1866 and 1870.

Our Coast Defences (Onze Kustverdediging). By Lieut.-General Schneider. 27 pp. 8vo. The Hague, 1908. Von Stockum. -/7.

The author's views may be briefly summarized as follows:—

The improvement of the coast defences has now become a matter of urgency. In recent years the attack has gained enormously in power, but little has been done to bring the coast defences up to modern requirements.

Holland must be in a position, whenever the political horizon of Europe is troubled, and some great Power demands to know whether she is in a position to prevent the occupation of her harbours by another Power, to answer unhesitatingly in the affirmative.

The coast defence of Holland reduces itself to the following definite points:—

The Helder, the positions at Ijmuiden and at the Hook of Holland, the fort (advocatd by the author) at Numansdorp, and the works at the West Schelde mouth.

The improvement of the coast defences, especially of their armament, involves a considerable outlay of money; but this expense is far below that which would be entailed by the occupation of Holland by a foreign Power. It is to be hoped, says the author, that if the improvements are decided upon, that the money may not be distributed over a number of years (which would postpone the completion of the work indefinitely) but may be voted *en bloc* by means of a short loan, as was done in 1895.

As regards the question of the manning of the coast defences, the opinion is becoming more and more prevalent in many countries that this is the function of the navy. In Germany the North Sea defences, which are the most important, are under the navy, while the defence of the Baltic coast is committed to the army. The author hopes that the whole of the Dutch coast defences may soon be handed over to the charge of the navy.

The Coast Defences of Holland. By Mr. F. Arondstein. A lecture delivered before the Dutch "Society for the Study of Military Science," on 27th March, 1908.

Mr. Arondstein considers that the position as regards coast defence would be most favourable if Holland were allied with Great Britain; in every other case, whether Holland were at war, or were endeavouring to remain neutral, coast defence must play an important part.

He therefore puts forward certain "minimum demands" based on the assumption that "at all times, even in a sudden emergency, any violation of our neutrality can be resisted by force of arms."

These demands take the form of the strengthening of the armament of some of the forts at the Helder, and the construction of some additional works at Ijmuiden, the Hook of Holland and in the West Schelde. Special flotillas of coast defence vessels and torpedo craft are recommended for the local defence of these points, and for the other navigable waterways giving access to the interior. In addition Mr. Arondstein advocates the concentration of the *Landwehr* at certain points, with a view to resisting landings on the coast; the fleet must have an active *rôle* assigned to it, and must not be tied down to the fortifications.

Finally, as regards *personnel*, the lecturer recommends that the coast defences should be under the navy and that a special naval corps of militia should be raised to garrison them.

Tactics (Taktik). Volume III. By von Balck. 4th edition. 432 pp., with 3 maps and an index. 8vo. Berlin, 1908. Eisenschmidt. 8/6. (For Vol. I. *see* p. 23, No. 7.)

This volume deals with organization, intelligence, orders, and marches.

1. The introduction treats of the influence on strategy of the geography of the country and of the seasons of the year. The author holds that these considerations may be of great tactical importance, but must be strictly subordinated to the main strategical plan of campaign. The idea of a geographical key to a country is

obsolete; wherever the enemy's fighting force is assembled, there lies the true key to possession of his country. The ground and the weather do not directly affect the result of a campaign, but they have a very marked effect on the time required to achieve the strategic objective.

2. Organization.—The organization of an army is intended principally to secure efficient control when deployed for action, and is determined by the distance over which such control is effective. Hence large armies consist of divisions of about 12,000 men, of which two or three are combined to form an army corps; smaller armies (such as the British forces) are organized purely on a divisional basis. The author gives details of the organization of the principal armies at the present day and in former campaigns. Since it is usually advisable to keep one-third of a force in reserve, he considers that each unit, from the army corps down to the troop, battery and company, should consist of three sub-units capable of independent action. The corps artillery and corps cavalry should be re-organized as divisional artillery and cavalry. Napoleon considered that one squadron of 360 sabres was sufficient for each division.

3. The organization of the train will be facilitated by the number of motor wagons now available. Thus one road train may replace 40 country carts.

4. The organization of the cavalry division in the principal armies is given in detail. The proportion of guns, namely 2·8 per 1,000 sabres, is still the same as in the Franco-German war.

5. The author considers that an army should consist of 3 to 6 army corps and 1 to 2 cavalry divisions. The "army" artillery should consist entirely of heavy howitzers.

6. *Intelligence.*—The general staff should collect, in peace time, information regarding neighbouring countries and their armies, and issue this information on mobilization. The information collected by the English Intelligence Division before the Boer war was mostly correct, but it was of little use, because there was no system of issuing it to the troops; this applied to the whole of the war.

7. Intelligence regarding a foreign country, both before and after the outbreak of war, is derived principally from our own (German) subjects residing or carrying on business in that country; it is also furnished by our diplomatic representatives in neutral States. The information published by the enemy's newspapers is of great value. Thus in the Crimean war Russell's reports to the *Times* were of great use to the Russians.

8. The tendency in war is to send in too many intelligence reports; these should be collected at intelligence centres, and only the useful ones forwarded. The author deals with the framing and forwarding of reports at considerable length, but this section is little more than a repetition of the Felddienstordnung.

9. *Balloons.*—For captive balloons the German cylindrical shape is preferable to the English spherical shape, being steadier. Large "rigid" dirigible balloons, starting from permanent sheds, will be used for strategical reconnaissance on the large scale. Small "semi-rigid" balloons, which can be transported in wagons, will be used for tactical reconnaissance. Balloons are safe from field guns at 2,000 feet elevation, and from special balloon guns at 5,000 feet.

10. *Orders.*—This section deals not only with the technique of orders, but with their conception. The author considers that the fog of war and the encounter battle will be normal conditions, and that the commander who waits to reconnoitre before striking will lose the advantage of the initiative. The bolder commander considers, not how the enemy will strike, but what he will do when he is struck.

11. Several historical examples of good and bad orders are given, and the section concludes with a chapter on the initiative of subordinates.

12. *Marches.*—This section takes up more than half the volume. It is in effect an expansion of the Felddienstordnung, with numerous historical illustrations. It deals with tactical and strategical marches, baggage and trains, and supply on the march. A chapter is devoted to night marches, and full details are given of the marching formation of various nations.

The volume concludes with a chapter giving numerous illustrations of marching performances, good and bad, mostly taken from the Franco-German war.

Tactics (Taktik). Vol. IV. By von Balck. 4th edition. 335 pp., with numerous diagrams and an index. 8vo. Berlin, 1908. Eisenschmidt. 8/6. (For Vol. III. *see* above.)

1. The volume under review deals with transport by rail and sea, outposts, quarters, reconnaissance, and supply.

2. *Railways.*—The author gives a brief summary of the arrangements for the railway transport of the French and German armies in 1870 and the Russian army in 1904-05. He cites numerous instances of the transport of troops by rail in the former war.

3. The first operation of a war will be great cavalry raids on the enemy's railways. If artillery and train are transported by rail and they are liable to be attacked *en route* they must be accompanied by infantry detachments.

4. Preparations must be made in peace time for the construction of temporary railways to carry the line round in case a bridge or tunnel is destroyed.

5. The construction of the Wady Halfa line in 1896 is cited as a remarkable feat.

6. In Germany, on mobilization, the general staff takes charge of the railways, and, in the area of operations, the military time table at once comes into force. All trains run at regular intervals and at a uniform speed of 14 miles an hour. The day is divided into six periods of four hours, of which one is left clear to make up delays and interruptions. Not more than six trains are despatched in each period.

7. Details are given of the rolling-stock required for each unit and for a complete army corps, and of the order of despatch of the trains. Instances are cited from the Franco-German war.

8. The military railway organization of foreign countries is briefly described. The author considers the English system of short trains running at 30 miles an hour inferior to the German system of long and slow trains.

9. *Transport by Sea.*—The information in this section is taken almost entirely from British official sources and contains little that is new to a British officer. The author considers the secret preparation of an over-sea expedition to be impossible.

10. *Outposts.*—This section of 60 pages, is principally a repetition of the Felddienstordnung, with historical examples and specimens of orders. There is a useful diagram of the German outpost system on page 72.

11. A separate chapter is devoted to outposts under special conditions such as the outposts of a flying column, on a river line, and in siege warfare.

12. The outposts system of foreign nations are described, and diagrams of the Austrian, Italian, French and Russian systems are given.

13. The German system of outposts consists in establishing strong picquets on the roads, the intervening ground being guarded by patrols and a few sentries; other nations use a continuous chain of posts, each complete with its reliefs. The author considers that the latter method requires an elaborate system of control which is certain to break down in war.

14. *Quarters.*—Bivouacs are preferable for discipline and mobility, billets for comfort; village bivouacs are intermediate between the two, and will generally be used in war. The technique of quartering (accommodation, inlying picquets. alarm posts, &c.) is considered in detail, with numerous examples

15. Diagrams of bivouacs, reproduced from the Felddienstordnung, are given and explained.

16. The methods of quartering used in other armies are fully described, with diagrams of camps. It is noted that the British army is the only one which uses tents other than shelter tents.

17. *Reconnaissance and Screening.*—The reconnoitring front must be three days in advance of the troops for large bodies or one day for small bodies, such as a division.

18. Screening follows automatically from the defeat of the enemy's cavalry, hence the reconnoitring force must be strong enough to assume a vigorous offensive. When this is impossible, recourse must be had to defensive screening, which means the occupation of a zone of country in advance of the army by defensive posts similar in organization to outposts.

19. The employment of the army cavalry and divisional cavalry in reconnaissance is fully described, with historical instances.

20. The cadres of cyclist detachments must be formed in peace time; this has already been done in France and Italy. The author considers that it will be necessary in future to register every bicycle in the country with a view to military employment. Cyclist detachments will be used to support cavalry and to carry despatches. The British wisely propose to use them as mobile troops for coast defence. The employment of cyclists in the field in large bodies (such as battalions) is out of the question.

21. Details are given of the cyclist organizations of various nations.

22. Reconnaissance during an action will be carried out by the troops engaged, not by the cavalry. The artillery will use officers' patrols, the infantry will use cyclists when possible.

23. Reconnaissance in force will be carried out by the three arms. Historical illustrations are given.

24. The reconnaissance regulations of other countries are considered in detail. The author disapproves of the Russian system of forming "rifle" companies in each regiment, intended specially for reconnaissance, since these companies take away the best men. The British "protective" cavalry does not fulfil the author's ideal of seeking safety in the offensive.

25. An interesting chapter is devoted to the advance of the 4th Prussian Cavalry Division in August, 1870.

26. *Supply.*—The author is unable to quote from the German supply regulations, since these are confidential. This section is based principally upon van Francois' "Supply Service in the Field." (An English translation of this book has been issued by the War Office.) The details given form rather dry reading. A comparative table of rations shows that the British issue considerably less bread and oats than any Continental nation, and rather more meat.

27. Great stress is laid upon the usefulness of the new German travelling field kitchens.

28. The author considers that motor transport, which is confined to the roads, cannot replace the regimental and supply wagons; but will be largely used on the lines of communication.

29. The supply service in the French, Austrian and Russian armies is described.

30. The concluding chapter deals with the supply of the French army in the Moscow campaign, and the supply of the 2nd German army in 1870-71.

Some Principles of Frontier Mountain Warfare. By Brevet-Major W. D. Bird, D.S.O. 41 pp., with 2 plans. 8vo. London, 1909. Rees. 1/-.

A brief treatise on the rules to be observed in campaigning on the North-West Frontier of India. Divided as follows:—

(1) General considerations.
(2) Strength and organization of columns.
(3) Marches and protection.
(4) Action of advanced and rear guards.
(5) Attack and defence.
(6) Camps.
(7) Protection of lines of communication.
(8) Defence of a post.

Under the above headings the writer considers how dispositions are affected by the nature of the country and the military capabilities of the tribesmen; by space occupied by columns on narrow hill tracks, and the probabilities of resistance; the protection of columns by picqueting hills, and the disposition of troops on the line of march and in advanced and rear guards; the precautions to be observed in posting and withdrawing picquets; the occupation of successive positions by rear guards; the importance of offensive action and flanking movements; how best to bring the tribesmen to action so as to inflict losses upon them; the importance of systematic defence in withdrawal. The part on camps deals with their form and choice of situation, picqueting, the nature of entrenchments and the disposition of the three arms. The part on the protection of lines of communication discusses the relative use of defensive posts and flying columns.

Mountain Warfare (Der Gebirgskrieg). By Colonel Freiherr von Lütgendorf (Austrian Landwehr). 166 pp., with 6 maps. 8vo. Vienna, 1909. Seidel. 5/-.

This treatise is primarily concerned with the characteristics of the mountain regions adjoining or within the boundaries of the Austro-Hungarian Empire, and the methods to be adopted in carrying on warfare therein.

In the nature of things, however, much that is said in relation to the particular localities dealt with will be equally applicable to any mountainous region, and therefore several chapters will be of general interest to those desiring information about mountain warfare.

In particular the following chapters are recommended for study:—Chapter IV., Operations in mountainous country; Chapters V. and VI., Defence and frontier arrangements for security; Chapter IX., The combat; Chapter X., Communications.

Machine Guns in Foreign Armies (Mitrailleuses à l'étranger). By Lieutenant Boullé. 77 pp. 8vo. Paris, 1908. Berger-Levrault. 1/-.

For some years past the value of machine guns in the fire combat has been recognized in every army, both as an aid to infantry and cavalry. Shortly after the termination of the South African war the mobility of machine gun detachments was increased, and in Manchuria variously constituted companies of machine guns were employed on both sides, and, as the war progressed, the number of these detachments increased.

Successive chapters deal with the following points:—Machine guns in different armies, the general characteristics of machine guns, their action and best method of employing them, organization of detachments, and the tactics to be employed against machine guns.

Illustration of Tactical Details from the Russo-Japanese War (Taktische Detaildarstellungen aus dem Russisch-Japanischen Kriege). Part II. By Colonel V. Habermann and Captain Nowak. 56 pp., with 5 appendices (maps, photographs, and details of artillery sights and directors). 8vo. Vienna, 1909. Seidel. 1/10. (For Part I. *see* p. 85, No. 9.)

This part deals with the cavalry action at Chu-chia-tun, the battles at Wa-fang-wo-pêng on the 14th and 15th June, 1904, and the fight at Hsiao-ssu on the 19th July, 1904.

The book is very clearly written and is illustrated by excellent maps. It is, however, somewhat difficult to reconcile the system of spelling the place names as used by the authors with that adopted in British official publications, thus Chu-chia-tun is spelt Judsjatun, Hsiao-ssu appears as Sjaosur, &c.

Provisional Regulations regarding the Methods of Crossing and Destroying Obstacles (Instruction provisoire sur les procédés de franchissement et de destruction de obstacles de la fortification). Official publication issued by the French War Office. 47 pp. 8vo. Paris, 1908. Imprimerie nationale. -/10.

The object of these regulations is to indicate the technical rules to be followed, the implements to be employed, and the formations to be adopted by detachments who have to cross or destroy obstacles in the presence of the enemy.

The regulations are divided into three parts, namely:—

1st part dealing with the crossing and the destruction of the principal accessory defences.

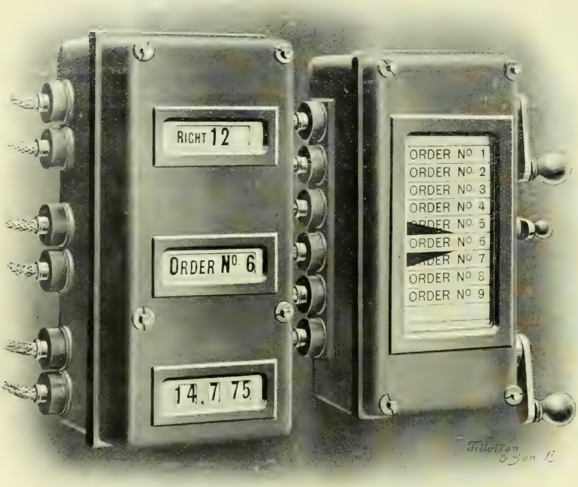
2nd part dealing with the crossing of ditches and surmounting of stockades and railings.

3rd part dealing with the destruction of stockades and railings.

It is laid down that obstacles can as a rule only be crossed or destroyed at night though instances may occur when it may be necessary to attempt such operations in daylight, under cover of artillery and rifle fire. The regulations insist that in any case it is absolutely necessary that the work must be carried out with very great rapidity and that the plan for reaching the obstacles must be very simple. The clearest orders are given as to the strength of detachments sent out to destroy obstacles, the *matériel* they are to take with them, and the simplest method of carrying out each particular class of demolition.

The regulations are illustrated by means of clear diagrams.

(To be continued.)



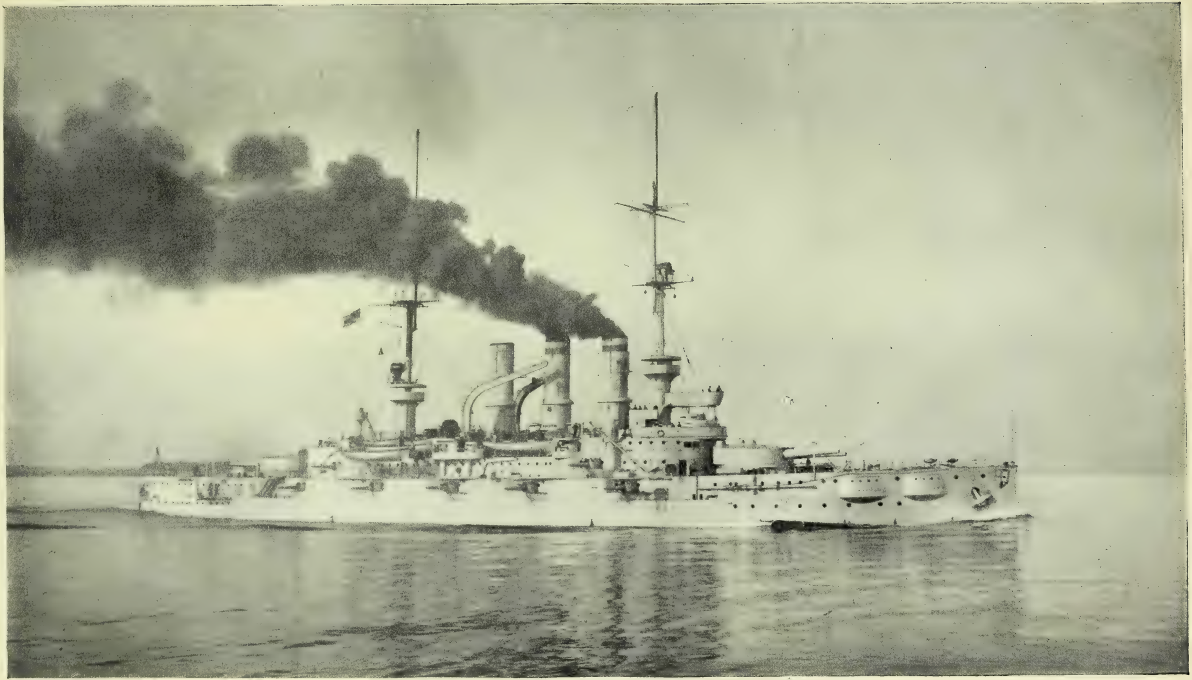
BARR AND STROUD'S PATENTS.

FIRE CONTROL INSTRUMENTS.

The above illustration shows a combined Deflection, Order and Range Transmitter controlling a combined Deflection and Range Receiver, and a separate Order Receiver.

These instruments are used for signalling Deflections, Orders, and Ranges, or any other desired information, from the Control Station on board ship to the various gun stations.

Barr and Stroud,
Anniesland,
Glasgow.



THE NEW GERMAN FIRST-CLASS BATTLE-SHIP "SCHLESWIG-HOLSTEIN," 13,200 Tons; 16,000-I.H.P. Speed, 18 Knots.

ARMOUR PROTECTION.—K. Steel belt, 9·8 inches amidships to 3·9 inches at ends; citadel, 7·9 inches (240 feet); battery casemates, 6·6 inches; barbettes and hoods, 11 inches; conning tower, 11·8 inches; signal tower, 6 inches.

ARMAMENT.—Four 40-calibre 11-inch Q.F. guns; fourteen 40-calibre 6·6 Q.F.; twenty-two 3·4-inch Q.F. guns; fourteen 1·45-inch machine; four small machine guns. Torpedo tubes, 6, submerged, one being in bow and one in stern.

J. J. K. & Co., Limited, London.

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. SEPTEMBER, 1909. No. 379.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

The following officers joined the Institution during the month of August:—

Lieutenant W. L. Palmer, 10th Hussars.
Lieutenant G. H. Sawyer, Royal Berkshire Regiment.
Lieutenant G. H. Worrall, Border Regiment.
Lieutenant A. H. M. White, R.N.
Lieutenant R. H. Rowe, R.G.A.
Captain D. A. Thomson, R.E.
Lieutenant R. S. Hopkins, East Yorkshire Regiment.
Lieutenant H. J. Soames, East Kent Regiment.
Sub-Lieutenant R. K. C. Pope, R.N.
Lieutenant J. N. Benbow, R.N.
Colonel P. S. Beves, Transvaal Volunteers.

II. ADDITIONS TO THE MUSEUM.

5376. Model of the Royal Artillery South African War Memorial to be erected in the Mall facing the Duke of York's Steps. The extreme width will be fifty feet, and the height of the central group, measured from the top of the steps to the summit, 26 feet 6 inches. The Memorial is being executed by W. R. Colton, Esq., A.R.A.

—Deposited by the Royal Regiment of Artillery.

6019. Seven Line Engravings, published by Colnaghi & Co. in 1812, by Charles Heath, after H. L'Evéque, entitled:—

"The Landing of the British Army at Mondego Bay."
"The Battle of Vimiero."
"The Bridge of Saltador."
"The Bridge of Nodin."
"The Attack of the Rear Guard of the French at Salamonde."
"Passage of the Douro by the Division under Lieut.-General Honble. Edward Paget."
"Passage of the Douro by the Division under Lieut.-General Sir John Murray." *—Purchased.*

6022. An Original Copy of "Bell's Weekly Messenger" for 10th November, 1805, with an account of the Battle of Trafalgar and Lord Nelson's Death.—*Purchased.*

III. ARMY PROMOTION LECTURES.

A course of Lectures in Military History on the subject set for the November Promotion Examination will be given as heretofore. Further particulars will be announced in the JOURNAL for October.

IV. LECTURES.

The following list of Lectures has been arranged for the autumn:—

Wednesday, 6th October.—"Machine Gun Tactics in our own and other Armies, by Captain R. V. K. Applin, D.S.O., 14th King's Hussars.

Wednesday, 20th October.—"The Use of the Motor for the Transport of Troops," by T. Clarkson, Esq.

Wednesday, 10th November.—"Our Food Supplies," by Douglas Owen, Esq.

Wednesday, 17th November.—"Use of Ski, and Training of British Soldiers for Duties on Snow-clad Frontiers," by Captain H. V. Knox.

Wednesday, 1st December.—"The Army as a Profession," by Major A. B. N. Churchill, late R.A.

Wednesday, 8th December.—"How Airships are likely to Affect War," by Major B. Baden-Powell.

THE EXPEDITION TO SICILY, 1718, UNDER SIR GEORGE BYNG.

By Captain H. W. RICHMOND, R.N.

On Wednesday, 17th March, 1909.

Admiral-of-the-Fleet Sir GERARD H. U. NOEL, K.C.B., K.C.M.G., in the Chair.

SIR GEORGE BYNG'S Expedition to Sicily with a squadron of English men-of-war is better known by the action of Passaro than by the succeeding events which occupied it for two years. The naval historians have generally treated the battle itself in some degree of detail, but have dismissed the combined operations in which the squadron was an all-important factor in a few sentences. Thomas Corbett's Tract of 1739 gives a very full description, as also does Cust's Annals of the Wars of the Eighteenth Century. Neither of these books are, however, commonly met with, and that fact, and the interest inherent to the Expedition, must be my excuse for making it the subject of a paper. The authorities other than the above, on which my description is based, are the logs of the ships and the despatches from Byng to the Secretary of State and the Secretary to the Admiralty, and the out-letters of the latter to Byng, all of which are in the Record Office.

The causes leading to the rupture with Spain in 1718 may be briefly recapitulated. The Treaties of Utrecht and Baden had given satisfaction neither to Austria nor to Spain; the Emperor refused to renounce his claims to the Throne of Spain; the King of Spain declined to transfer the provinces in Italy and Flanders ceded to the Emperor by the Treaty. The hostility between the two Powers was brought to a head in 1717 by the arrest of Don Josef Molino, the recently appointed Inquisitor-General of Spain, while passing through the Italian provinces. Cardinal Alberoni, who had been reorganising the Spanish State, and desired peace to complete his labours, was obliged to bow to the storm this insult occasioned, and determined to make war with the same energy as he had pressed his reforms in peace. A force of 9,000 foot and 600 horse, with a train of artillery and engineers, was embarked in 80 transports at Barcelona, and, escorted by 9 ships of the line, 6 frigates, and some small craft, passed over to Sardinia, which belonged to the Emperor. The real destination had been kept secret, the intention as given out being that the Expedition was intended for service in the Levant against the Turks and for the relief of the garrison at Mallorca. Sardinia was quickly over-run, a garrison was left, and the remainder of the troops returned to Barcelona.

This breach of the peace by Spain was quickly followed by remonstrances from England and France, who were guarantees of the neutrality of Italy. Endeavours extending over many months were made to effect a settlement of the quarrel by diplomacy; every effort possible was made by England to avert war; a Triple Alliance, developing later into a Quadruple Alliance of England, France, Holland, and Sardinia, was formed for the preservation of European peace, and among the offers made to Spain was the restoration of Gibraltar. Alberoni in the meantime carried on secret negotiations, offering Milan to the Duke of Savoy as an equivalent for Sardinia, urging the Turks to continue their war with the Emperor, and endeavouring to form an Alliance with Charles XII. of Sweden and the Czar of Russia for a combined operation against England and the restoration of the Stuarts. Spanish preparations continued on a large scale, and in the spring of 1718 orders were given to fit out a British Squadron for the Mediterranean. Byng hoisted his flag on board the *Barfleur* at the Nore on 1st May, sailed from the Downs three weeks later for Spithead, and lay there a week; he dropped down to St. Helen's on the 1st June, and there embarked three regiments of infantry from the Isle of Wight, with whom he was not much pleased. "I find," he says, "a great many of them miserable creatures, and not fit to serve. The best of them I shall pick out to endeavour to complete our complements, and the best of what shall be left I will put on board the fire frigates in the harbour, and discharge the remainder."

Byng's orders were extensive and his powers considerable; he was made a Plenipotentiary, and his instructions were to promote all measures that might best contribute to the composing of the differences between Spain and Austria, and to prevent any further violation of the neutrality of Italy. He was to endeavour to prevent any further hostilities and to arrange a peace; but if the Spaniards attacked the Emperor's possessions in Italy or the island of Sicily, he was to use all his power to hinder them and to defend the territories attacked, employing his squadron as necessary for that purpose.

Byng sailed on the 3rd June, called at Gibraltar, and passed on to Malaga. He communicated the object of his coming to the Ambassador at the Court of Spain. The answer received was short and to the point: "His Catholic Majesty has done me the honour to tell me that the Chevalier Byng may execute the orders that he has from the King, his master. Escurial, 15th July, 1718. The Cardinal Alberoni."

Having spent four days at Malaga, he passed on to Minorca, where he landed some troops and embarked some others, and, expecting the Spanish fleet would be at Naples, he sailed at once for that port.

The Spaniards had sailed from Barcelona on the 8th June, the same secrecy as to their destination being observed as in the Expedition to Sardinia the previous year. The fleet consisted of 12 ships of the line, 2 fire ships, 17 frigates, 7 galleys, 276 transports and 123 tartans, in all 438 sail, carrying 36,000 men, 8,000 horses, and all equipment and stores, and arrived off Palermo on the 19th of June. The troops, under the Sardinian Governor, Count Maffei, evacuated the town, leaving a small garrison in the citadel, which soon surrendered, and the Spaniards took possession of the town and a new 64-gun ship in the harbour. Further troops and supplies continued to arrive during the next fortnight, and a strong force having been left in Palermo, the fleet and army were moved to Messina. The troops at once invested the town, the squadron anchoring in Paradise Road, and a division of two ships and a frigate were detached to Malta to block up the Sicilian galleys which had retreated there.

Byng arrived at Naples late on the evening of the 21st July, heard there that most of Sicily was already in the hands of the Spaniards, and sailed on the 25th for Sicily to look for the Spanish fleet, "which," says he, "when I see, you will hear further account of." His intentions as to what he was going to do were quite clear. Writing on 12th July to Mr. Craggs while on his way to Naples, where he hoped to find the Spanish fleet, he says: "If my good offices shall not prevail, since we cannot come time enough to prevent their landing, and they will not withdraw their troops, I intend to attack their fleet and render them useless from either covering their army or bringing more succours to them, which I take to be the design of sending this fleet under my command into these seas."

Sicily, it must be borne in mind, belonged still to the Duke of Savoy, who, now that his possessions were over-run, desired the assistance of the Emperor to defend what remained to him in the island. "Nothing is more obvious," says Byng, "than that if the Spaniards are permitted to seize the kingdom of Sicily and keep possession of it, it is in order with more ease to invade the Kingdom of Naples." With Messina taken, a good harbour would be in their hands for their fleet to lie in, and the transport of their troops to Calabria, and their maintenance there would follow as an easy matter.

On the evening of the 29th July he came off the point of Messina and sent his first captain, Saunders, ashore in the admiral's 12-oared barge, with a letter to the Marquis de Lede, representing the good offices the King had used to compose the differences between the Crowns, and proposing a suspension of arms. The fleet anchored at 9 p.m. in line of battle about a mile off the shore, between the lighthouse and Messina.

At 5 a.m. the next morning, Saunders returned with the answer, which was to the effect that de Lede had no powers to treat, his orders being to seize Sicily for the King of Spain. On hearing this, Byng weighed. He had heard that the Spanish squadron had passed through the Straits of Messina the day before, and that it was gone to Malta, and his intention was to anchor his squadron before the town of Messina and remain there to prevent, if possible, further hostilities.

The Spaniards lying off Messina had heard of the approach of the English squadron on the 29th July by a felucca from the Lipari Islands which had sighted them, and a council of war had deliberated what should be done. Among the admirals was a renegade Englishman, by name Camocke who advised neutralising the English superiority in guns by anchoring the squadron in Paradise Road, where, supplemented by batteries on shore, the strong current of the Strait would make any attack other than by boarding a difficult one. His advice was not accepted, but no better plan was produced. Hoping in a weak manner that Byng came with pacific intentions, the squadron put to sea in a scattered formation of three separated groups on the morning of the 30th.

At 7 a.m. on the 30th, Byng's squadron passed through the Straits; an officer from the Governor of Reggio came on board and told the admiral the Spanish squadron was in sight from the town, and Byng signalled to make all sail. He passed Paradise Road, where a great fleet of transports lay, which saluted the admiral with a general discharge of cannon, returned by Byng with 21 guns. At 11 o'clock the *Superb* made the signal for seeing a fleet, and a little later the whole Spanish squadron was in sight. Touch was kept with them, the *Grafton* and *Superb* being thrown out ahead and showing lights throughout the night, and at 4 o'clock next morning the Spaniards, very much separated, were seen. Six ships, detached to attack a division of six Spanish ships and a large number of small craft, were in action by 7 o'clock; by eleven o'clock the main body was in action, and a running fight, lasting till half-past six, followed, in which out of 29 ships of all classes, 15 were taken and 14 escaped, of which 4 were captured later when Messina fell.

In speaking of his reason for attacking them, Byng says: "I would have thought myself inexcusable to have suffered Sicily to be attacked, the Spanish fleet in my sight in order of battle pretending to engage my master's fleet, and let them go unfought to Spain in order to return with greater fleets and forces to execute their further designs in Italy, which they threatened to do." The greater fleets he referred to were new ships to the number of 10 or 12 building in the Biscay ports, to be ready in March to go to Barcelona and Cadiz for their armaments, Sicilian ships and galleys already taken, or bound to be taken, and others the King of Spain was buying in Genoa and Venice, which would make up a fleet of 50 sail next summer, with which the openly talked-of invasion of Naples would certainly follow. "Further," says Byng, "the Spaniards have already seized British merchant ships to use as transports, interrupting our trade, and have taken seamen out of our ships, and with this fleet they propose to have next year, they will give laws in the Mediterranean even to our trade."

The first step towards the attainment of his object—but only the first step—had been taken by the destruction and dispersal of the Spanish squadron. There was still an army of 36,000 men to be dislodged from the island. The situation in the island was that the Sardinian troops, reinforced by 1,000 Austrians whom Byng had brought from Naples, held the citadel of Messina; the town itself was in the hands of the Spaniards. Sardinian garrisons still held Trapani, Syracuse, and Melazzo. The whole of the remainder of the island was in the hands of de Lede's troops, and the population was in favour of the Spanish Crown.

Byng could do nothing to dislodge the Spaniards without the co-operation of troops in the island; but the help of the squadron was necessary to protect the communications of those troops and prevent the arrival of Spanish reinforcements; a complete blockade of the island was thus demanded. The main bodies of the Spaniards were at Palermo and investing Messina, about 12,000 or 14,000 foot and 3,000 horse round the latter, the remainder in the vicinity of Palermo, and blockading Melazzo, Syracuse, and Trapani. Of Austrian troops there were not more than 7,000; another 6,000 were expected from the Milanese, but were not likely to arrive before October, when the season would be very advanced for opening a campaign. The approach of winter brought with it other considerations: bad weather and no port in which to shelter would make the work difficult for the squadron if Messina fell; and Byng wrote home saying he feared it would be absolutely necessary to winter abroad, "as," he says, "there will be so many services to do, in convoying the troops, ammunition and provisions over to Sicily, cruising to intercept the Spanish succours which must come by sea, and covering the Germans from the insults of the Spaniards, which would still happen should our fleet retire out of these seas; and the necessity of cleaning the ships of the squadron from time to time, which must relieve on these various services, will make the number not too many with us." The minimum number he required was 20 of the line, the Spaniards still having 17 ships in those waters, and by the nature of the services required, Byng's force was obliged to be scattered. "If," he says, "the strength was always to be kept together, probably a less number would do, but when there is a necessity to divide your fleet in several little squadrons, you may expose them to insult."

Byng urged the Austrians to attempt a sortie from the citadel of Messina and recapture their outer defences, as the citadel must otherwise fall. His suggestion was to carry all the Austrian troops across from Reggio and concentrate them in and about the citadel, to make a demonstration with the fleet to the northward and southward of the town in order to draw off some of the investing army by threatening their wings, and himself to lend 500 men from the squadron to hold the citadel, so that the entire garrison would be available for the sortie. However, the generals did not think this practicable, and on the 28th of September the inevitable happened—Messina capitulated, the garrison being allowed to march out with the honours of war and to be transported to Reggio.

In the meanwhile Melazzo had been inspected by General Wallis, who went round by sea in the galleys covered by two ships of the line. His object was to see how far it would serve for the assemblage of a large force when this should arrive, and as a base from which to operate either for regaining Messina or for attacking the communications of the Spaniards with the open country, whence they drew their supplies.

Byng's ships were now fully employed. Some were escorting the Messina garrison to Melazzo and to Syracuse, others were sent to Naples and Genoa to convoy the troops thence to Sicily; a division was stationed between Melazzo and Messina to prevent interferences by sea with the preparations at Melazzo, and all which could be spared were sent to Mahon to clean, that they might be ready as soon as possible for service again. The Spanish prizes taken at Passaro were sent under their escort.

Byng's intention was to cruise with a small division under him between Palermo and Messina until late October, after which it would not be safe, as he says, "for the bigger ships to lie on an iron coast where there is not one harbour to go to for relief, nor in these parts, save only Syracuse, which is on the other side the island, and much out of the way for the services required."

Camocke, who had escaped from the English at Passaro, had made for Malta, and, lying there, prevented the egress of the Sicilian galleys. Byng therefore went in October with five ships and brought back the galleys, threatening to destroy the Spaniards in the harbour if they interfered, and then sailed for Naples to confer with the Viceroy as to the further operations for the reduction of the island, arriving in the Bay of Baiae on the 1st November.

Here, indeed, his presence was urgently required. By the terms proposed by the Quadruple Alliance, Sardinia was to be transferred by the Emperor to the Duke of Savoy in exchange for Sicily; but Sardinia, which he was to receive, was altogether in the hands of the Spaniards, as was most of Sicily; and until he could obtain some guarantee that effective steps would be taken to put him in possession of Sardinia, the Duke declined to allow the Austrians to make any settlement in Sicily or establish any magazines. Byng worked hard to obtain an agreement which should overcome these difficulties—the outcome of mutual distrust. He pointed out how impossible it was for the Austrians to make any headway in the island unless the two countries joined hands and acted together; but the Marquis de Breil, the Minister of Savoy at the Neapolitan Court, declined to give any orders for his troops to assist the Austrians until certain points were agreed to. These included the equal distribution of prizes, the putting of recaptured territory in Sicily under the jurisdiction of the Sardinian Governor, and an undertaking that the Sicilian galleys should not be called upon for service in greater numbers than the Austrians. At a meeting at Byng's house he urged de Breil to modify his demands, showing how impossible they rendered the whole operations, and, although from a military point of view he contemned the idea of sending an expedition to Sardinia as a separate undertaking from that going on in Sicily, yet in order to convince the Marquis of the good faith of the Allies, he advocated the raising of a second expedition for that purpose, and engaged at his own expense to pay for half the ammunition which the Duke of Savoy was to lend from Syracuse. "I was so sure," said he, "that His Majesty's intention was certainly to place the King of Sardinia in possession of that island, that I would take it upon me to be answerable for it, not doubting that the Powers that should find the necessaries would indemnify me, and not let me suffer in my fortune for what I mean in their service." He also offered to furnish 30 or 36 cannon, shot, and 1,000 barrels of powder taken out of the prizes, for which he would prevail with the captors to take such security as the Emperor would give. He suggested that 6,500 Austrian troops should be embarked at Spezia, Vado or Genoa, whence he would convoy them to Sardinia, and then take the transports to Trapani and Syracuse, for 5,000 Piedmontese troops in the garrisons of those places, whom also he would carry to Sardinia, himself lending some mortars and cohorts from Mahon.

Byng's earnestness and energy had their reward. Although the expedition as planned was not carried out, mutual jealousies were relieved by his straightforward and whole-hearted dealings. He saw that the first thing to be done was to take measures to get the two countries to work in unison, even if from a military point of view the plan was a weak one involving a dissipation of force, instead of a concentration on Sicily followed up by reduction by similar means of Sardinia; and in writing to Craggs he pointed this out and urged that the Court of Turin should exercise a little patience and keep their garrisons in Sicily until the Spaniards had been beaten and Messina retaken.

In the meantime affairs had been critical at Melazzo; the transports bringing reinforcements from the Milanese had been delayed by bad weather, and took no less than 34 days getting from Genoa to Naples. The Spaniards had made use of the time to entrench themselves strongly round Melazzo, and had been receiving reinforcements from Italy run across in French and Genoese ships. Provisions and stores reached them in the same way in neutral bottoms, under pretence of being laden for Malta. Added to this, Camocke, taking the opportunity of our ships being off Melazzo, and leaving Messina open, slipped across and got into Messina, while, owing to lack of stores at Mahon, the ships sent thither in August to clean had not yet returned, though they had been more than three months absent. In January bad weather drove the British squadron away, and prevented supplies from Calabria reaching the garrison. Camocke again seized his opportunity, came out, and by a stratagem nearly captured the supply ships in Tropea. Byng, at Naples, hearing of the straits to which the garrison was reduced, at once embarked provisions on board three ships which had opportunely arrived at Naples from Mahon, and sent them with orders at all risks to relieve it, and this they did when the troops were in their last extremity. Orders also were sent express to Reggio for Mathews to try and intercept Camocke; but none of the three squadrons were so fortunate as to fall in with him. The continual sea cruising in the winter had caused the squadron to suffer severely. Five ships were cruising off Reggio, four off Melazzo, two small ships were on the Riviera for the protection of trade, where Byng says: "The Consul at Livorne writes me they have saved the nation more than £200,000." Five others were at Mahon refitting, having relieved four which had come thence with Mathews and been sent to Melazzo with provisions. Byng himself now went to Mahon to expedite the work of repair, and in writing to explain how impossible it was to send ships home, as the Admiralty desired him to do, he points out again and again the numerous services the operations of a sea blockade demand, even though the enemy's forces be small.

Troops were now being got ready for the approaching spring campaign. It was expected that about 14,000 Austrian foot and 2,770 horse would be available for operations in Sicily against the Spaniards. In February the siege of Melazzo was breaking up, but the squadron had been unable to prevent the Spaniards getting reinforcements into the island. During Mathews' absence from off Palermo, four battalions were passed across from Sardinia, giving them 19,000 troops in that part of the island.

Writing in March, Byng says: "I may without vanity say had I not remained on the coasts of Italy and at Naples, Melazzo with that little army in it must have been entirely lost to the Emperor."

Byng did not remain long in Mahon; the stores there were in a very bad condition and delayed him and his squadron more than he liked, no fewer than 11 of his ships being laid up at the same time. During his absence Camocke had a narrow escape of being captured, as a frigate—the *Pearl*—in which he was making his passage to Palermo was taken off Taormina, but he managed to get ashore. He had endeavoured to corrupt Captains Walton and Hamilton, offering them each £10,000, a peerage in the United Kingdom, and a Blue Flag if they would bring over their ships to the service of King James. He also approached Byng on the same question. The offers were treated with scorn and indignation by the recipients; and this is the last we hear of Camocke in this campaign.

In consequence of the failure to take Melazzo, the loss his troops were suffering, and the increasing difficulty of getting reinforcements which would follow when the squadron got to sea again in full strength, de Lede, the Spanish general, began making overtures to evacuate Sicily; but in this matter Byng had already made his mind quite clear, and he had no intention whatever of allowing the troops to leave the island and be set free to serve elsewhere, until the King of Spain acceded to the demands of the Triple Alliance.

On his return to Naples in the early days of April he received news of the intended invasion of England from Cadiz. Alberoni, finding his plans in the Mediterranean held in check by England, determined to try and make a diversion near home by means of a threat of invasion. The death of Charles XII. had removed the assistance he hoped for in the north; but with a reckless disregard of consequences he launched a small army of 5,000 men from Cadiz against England. To its failure and the subsequent operations on the Atlantic coast I will not refer here. A home squadron, under Sir John Norris, provided sufficient protection in the Channel, though it may be remarked that troops were brought over from the Netherlands and States General. The only effect on Byng's operations was that on hearing of the intended invasion he sent home two regiments to Plymouth at once.

The co-operation of the Sardinian troops had at length been agreed to, and a Convention of mutual assistance, arrived at largely by Byng's influence, was signed on the 22nd April. On the 24th April the Austrian general to command the forces in Sicily arrived at Naples, where 13,500 troops were assembled, the Melazzo garrison numbering about 8,000 more; and their employment formed the subject of an immediate conference. They might either be carried to Palermo, leaving a sufficient garrison at Melazzo, and thence advance to the eastward on Messina, or they might land near Melazzo and act in conjunction with the garrison, and so advance on Messina. The latter plan was urged by Byng, as it struck sooner at Messina, where the remains of the Spanish squadron lay. The capture of the port would relieve any anxiety as to the part those ships could play in the future, and would provide a much needed harbour for shelter. The destruction of the Spanish ships was still to Byng a matter of importance for another reason, namely, that the armament at Cadiz might be intended to join the ships at Messina; this Mathews' small squadron would be unable to prevent, especially if they first made a junction with the recently built ships in the Biscay ports. The Duke of Berwick, however, with a body of French troops, assisted by a small British squadron, had already started on the expedition in which he burnt the ships at Port Passage and Santona. Byng did not know what might be happening, and could not but view with apprehension the possibility of the incursion of a fresh concentrated squadron among his units scattered in small detachments on their several services. However, "if they went," says he, "towards England, I am told there has been some pretty smart Protestant winds in those seas, such that I am in no pain for what they can do against England, especially since you have that great strength at sea (Norris with a squadron was cruising off the Lizard) that I am informed are looking out for them," and he hopes "the Duke of Berwick has been sincere in his intention to put an end to the ships building at Passages."

On the 22nd May he sailed from Naples with the transports carrying 12,000 foot and 3,000 horse, escorted by 7 of the squadron. The Spanish squadron in Messina was being watched by 4 more; 2 were at Gibraltar, and 8 still at Mahon delayed by want of stores. The passage was short; Count de Merci, the Austrian general, who embarked on board Byng's flagship, went on ahead when they got near Sicily to confer with General Zumjungen, the commander at Melazzo, and on the 27th the fleet and transports anchored between Pattee and Olivetta, which is not far from Melazzo. The disembarkation of the troops began at daylight next morning, and the whole force was landed by 8 a.m.—a good piece of work—and marched up to and occupied the heights of Olivetta. On their arrival the Spanish army holding Melazzo decamped, and not being strong enough to engage the Austrians, fell back. The fleet moved round to Olivetta and there landed the field pieces and other stores without interference, and next day dropped round to Melazzo and landed the remaining horse—about 600—and all the transport of the army.

The Spaniards fell back into the difficult country between Melazzo and Messina and occupied a strongly entrenched position at Franca Villa; their further retreat might be either to Messina, Syracuse or Palermo, Franca Villa being the junction of the roads to these places. Intercepted letters indicated that Messina was their destination, and in consequence Byng had already taken the precaution to get all the galleys, both Austrian and Sicilian, massed in the Straits to intercept supplies of all kinds from Catania to Messina. The lack of ships was still hampering him, those at Mahon not having yet returned owing to the slowness with which their careening proceeded through lack of stores and caulkers, though more ships were badly wanted to shut out succours coming to Palermo from Spain and Italy.

After landing the troops, a small force of 2,000 foot and 120 Dragoons was passed over to the Lipari Islands under the convoy of 2 galleys and 2 frigates. The Liparese opposed the landing, but it was soon effected and the castle taken. "The Liparese," says Byng, "are a nest of robbers, and cruise upon and infest our embarkations."

A close watch on Messina was now kept by the Squadron under Mathews; it was noticed that the ships inside the Mole were getting ready to sail, but the blockading squadron lay observing them with such care that escape was impossible.

The advance of the Austrian army began on the 17th June. Byng, joined at last by three more ships and the bomb vessels, moved round the coast, taking with him the transports and the ships with provisions for the army, towards Taormina, the point for which the Austrian general intended to march. His stores would thus be ready for him on his arrival. Three days later de Merci attacked the Spanish army in a strong position in the hills round Franca Villa, with the result that he advanced his forces about 8 or 10 miles, but lost 2,500 men, and found himself unable to proceed any farther on account of the strength of the Spanish position, their troops well entrenched and their front protected by a river. Merci himself was wounded, communication between Melazzo and Franca Villa was cut by the armed peasants, and the situation was critical. Directly Byng heard from the commander of the galleys off Messina that this severe action had taken place he sent his flag-captain to the Governor of Melazzo and begged him to send two battalions from his garrison to assist in establishing the communications between the army and the transports at Taormina. The general at once sent what was asked for, as well as 1,000 newly arrived recruits, and these Byng embarked without delay and carried round to Taormina, where General Wackendon with 3,000 men and 500 horse had been sent in advance to open the communications with the army and supply provisions from transports in the anchorage. The reinforcements thus rapidly provided were of value; an attempt by the Governor of Messina to cut the communications, by means of a sortie with the garrison, was frustrated.

The same evening that Byng made these arrangements he received a letter from de Merci, asking him to come and join him at the camp and to consult on what should be done in the critical juncture. Byng at once embarked in a galley, previously dispatching an express to Naples to the Viceroy pressing him to send at once all the troops he could spare from that kingdom, "for," said he, "the whole of our affairs in Sicily depend on this action." He landed the next day and rode up to the camp to view the situation of the armies. Merci, wounded, lay in his tent; despondency had taken the place of over-confidence, and the strong position held by the Spaniards and the lack of troops sufficient to storm it induced him to propose placing his troops in cantonments and awaiting reinforcements, which he begged Byng himself to go to Naples and endeavour to procure, suggesting that those destined for Sardinia should be diverted to Sicily. A council was held next morning, all the generals and Byng being present. He expressed himself greatly averse from the proposition of keeping the troops inactive, the effect of which would be to give heart to the enemy, and pointed out that the way to Messina was still open. If Messina were taken, not only would it give the people a good impression, but, what was even more cogent, it would give a port for his ships and an admirable base of operations. He pointed out that the experience of keeping two squadrons at sea last winter, the one in the Straits of Messina and the other securing the communications of Melazzo with Calabria and Apulia could not be repeated without a sheltering port. The destruction of the Spanish ships there would set free his own, which he could then employ better on the coasts of Spain, "which," he says, "would straiten the enemy and obstruct their sending succours to Italy"; or, in other words, that it was easier to stop the Spaniards at their point of departure than on an extended coast.

The conference over, Byng returned to his ship and hurried away to Naples, where he at once had an interview with the Viceroy, Count Gallas, impressed on him strongly the critical nature of the situation, and urged that the Sardinian expedition should be deflected to Sicily and other troops for Sardinia provided. Writing to Stanhope, he begged him to press the Emperor to give orders to carry this out, in order, he says, "either to have the port of Palermo or Messina in his hands before the summer is over, for if he has it not it will be impossible, I think, to keep ships cruising on that coast without a port to go to. . . . . If we do not have Palermo or Messina (the latter I could wish), I do not see how it is possible in the winter season to prevent the Spaniards being supplied from Spain or Italy, or the communication kept open with Calabria." Further, as far as the expedition to Sardinia was concerned, the nearest way to Sardinia was through Sicily.

Besides urging these points with the Austrian Viceroy, he argued similarly with the Sardinian Minister at the Neapolitan Court. Added to his difficulties, the Admiralty were pressing him to send home ships, and his replies contain lists of the disposition of the squadron, with a request that the Admiralty will give him their opinion as to how it should be employed, as they appear to think he does not require all the ships he has. Yet even what he had was insufficient entirely to prevent the Spaniards getting troops into the island; in July the division off Palermo captured three ships carrying 800 reinforcements from Sardinia. The arm of the fleet was, however, far reaching. The *Dragon*, commanded by Captain Scott, being detached at Lisbon, found there four transports getting ready for sea, which he stopped, and the troops were obliged to be disembarked and marched back through Portugal.

Having made his representations to the Powers at Naples, no more could be done till the assent of the Courts was obtained, and Byng returned to Messina in the end of July. During his absence Taormina had been captured by General Zumjungen, and the Austrian army, having forced two other passes without great difficulty, were now encamped on the south and south-west sides of Messina, but were not sufficient to invest the town completely. However, on the 8th of August, Messina opened its gates and the Spanish garrison retired into the citadel. The end was now near, and the blockading squadron was moved close in to prevent the escape of the Spanish ships, on which the latter struck their yards and topmasts, "so that I think we shall not hear of them at sea this summer."

The question as to whom these ships should belong on the fall of Messina was now imminent, and I cannot do better than quote Byng's words: "Though the King in his great goodness has been pleased to give to his seamen such prizes as he shall take, and thinking we shall have a just claim to those when the citadel shall fall, yet the King of Sardinia's Minister laying claim to those which were his master's ships, which are two of the best of them, and the Emperor's officers may think that they have a right to them as falling within their port. To avoid all disputes I have desired General Merci that a battery may be raised to destroy them, and have offered some carcasses to endeavour to burn them. He has promised me they shall be destroyed, and then I am sure we shall be at the expense of no more squadrons to attend them." There is no suggestion in any of his letters of destroying every maritime rival of Great Britain in the Mediterranean; his object was to get the work done, and to effect this unanimity was essential. Disputes about prizes could only cause friction and weaken the combined forces, and Byng spared neither trouble nor his own pocket to make matters work smoothly. It must be borne in mind that in any case some of the prizes would have fallen to the fleet, and his share of the prize money might have been, with a lesser man, a consideration affecting his actions.

On the 10th August he heard that his efforts at Naples had been successful; the troops from the Milanese intended for Sardinia were to be sent to Sicily. Matters at Messina being satisfactory, Byng felt his presence no longer necessary there, and always wishing to be where he could most assist the common cause, he sailed next day for Genoa to hasten the transportation of these troops. He left 6 ships in the Straits of Messina, 4 off Palermo, 3 were at Mahon cleaning, 5 were on transport convoys, 2 cruising for protecting trade on the coast of Genoa, and 2 convoying store ships home.

On his way he called at Naples, where he was able to stir up the ill-prepared Neapolitan Government, and then sailed for Vado. The troops were not ready, and he was delayed three weeks in Vado Bay. By the 28th September they had arrived and been embarked, and he sailed at once for Messina, and found on arrival on the 9th October that Merci had carried out his wishes, and four of the biggest Spanish ships were sunk. His arrival was opportune; Merci was in such want of powder that the progress of the siege was delayed, and the powder vessels sent on ahead by Byng were most welcome. De Lede had retired to Lentini, to the southward of Catano, and does not appear to have hampered the operations which now progressed with redoubled vigour. The completion of the work of transporting the troops from Genoa left free some of Byng's ships, and he at once detached the *Orford* and *Rupert* to the Gulf of Rosas to assist the Duke of Berwick, whom, he was informed, was operating in those parts, and "so soon as Messina shall be taken," he told the Admiralty, he would be able to send home three more ships.

Messina citadel surrendered on the 18th October, and the Spanish garrison was embarked on transports and carried to Augusta. De Lede fell back and established his main body in a formidable position at Castro Giovanni.

Although Messina was taken, the difficulties were not yet over for this year's campaign. The district had been stripped by the Spaniards, and it would not support the Imperial army, so that the hoped-for project of wintering there was not to be realised. The Spaniards held the great reserves of grain in the Palermo district, and, although an advance on Palermo was the movement most to be desired, it presented great difficulties. To march there with de Lede in his strong position on the flank at Castro Giovanni, was impossible. The transports could not carry the whole army, as most of them, the settees and tartans, were unsuitable for use in the winter weather now approaching, and to send the troops round one-half or one-third at a time was to expose them to attack in detail. Trapani, standing on a neck of land, although it might be held against an attack, could quickly be starved out, as there were no supplies in the district, and until supplies could be collected and magazines formed, it appeared that matters were at a deadlock.

Once more Byng saw and provided the way out of the difficulty. Although Trapani had no provision, grain could be got from Barbary, and he proposed sending as many troops as the transports would carry to Trapani and supplying them with provisions from Tunis, the nearest port on the African coast. One difficulty remained: the Austrians had no money, and the Moors would not sell except for ready money. This was solved by Byng, who collected and advanced them a sum sufficient to pay for a present supply.

Affairs were got in train at once. A man-of-war and two transports went to Tunis for grain, and the embarkation of the first half of the army began. These sailed on the 11th of December, and were safely landed at Trapani; the operation was answered by Lede, who moved his army in the direction of Palermo, leaving a garrison at Castro Giovanni, and took up a position between Monreale and Carini to cover the Caricatori, or grain supplies.

Byng sailed with the transports on their second journey on the 14th January, and reached Trapani after a bad passage of 15 days. He found the Spanish Army about 12,000 strong on lines from Allano to Castel Vitrano, the Imperial Army of about 10,000, between Trapani, Marsala, and Mazzara; both were weakened below their full strength owing to the numerous garrisons they had detached, and the Spaniards were said to have lost about 7,000 men in the field and by sickness.

Having seen affairs in a satisfactory state, Byng returned to Naples, there to arrange measures about victualling and stores, leaving Saunders in command at Trapani with five ships and two bombs. The Austrian advance began on the 12th February. De Lede, finding his chances of success very small, proposed to evacuate Sicily on the condition of taking his troops back to Spain, and to this the Austrians were prepared to assent, as it would put Sicily into their hands without further trouble; but the English Admiral could not look upon the setting free of a large army, which might be employed against England or France, in the same light, and refused to assent until the King of Spain should have acceded to the whole demands of the Quadruple Alliance. The advance, therefore, continued after a discussion of the proposal, and more troops were brought round from Melazzo by sea.

Byng left Naples in March, and returned with powers to treat for the evacuation. When he returned the Austrian camp was at Castel Vitrano, and the Spanish army was falling back before de Merci, in the direction of Palermo. The Austrian advance along the coast was assisted by the fleet which coasted along supplying the troops with provisions and necessaries, and carrying the heavy guns for the reduction of Palermo.

On the 20th April, the fleet reached Mondello Bay; here de Lede communicated with Byng and tried to arrange for a suspension of arms by sea; but Byng, suspecting an artifice to detach him from the Austrians, declined to make any arrangements in which they also were not concerned.

On the 26th, a division of Austrians under Nypperg assaulted Monte Pellegrino, supported by the fire of three ships, and attacks took place on all parts of the Spanish lines. On the 2nd of May some Austrians surprised a redoubt which commanded the line of the camp, the garrison of which, as Corbett puts it, "taking a siesta according to the custom of that nation," and a general attack on the whole line was about to take place when a Felucca arrived, bringing orders to de Lede from Spain for an unconditional evacuation of Sicily.

On the 6th of May, the Convention was signed and arrangements begun for transporting the troops: the first lot of Spaniards—12,000 foot and 600 horse—were ready to sail on the 10th of June, and another equal number was taken away in August, when Byng sailed for Cagliari to settle the evacuation of Sardinia and its transfer to the Duke of Savoy. The squadron returned to England, and Byng, having completed "everything

I had in command for His Majesty's service," sailed for Leghorn, thence to go to Hanover to report his proceedings to the King.

The description I have given of this expedition is, of course, a very sketchy one. The whole of the history of this little war still remains to be written in detail, and my purpose has been merely to bring out, as fully as the time at my disposal admits, that part of the combined operations dealing with the invasion of Sicily, and the share taken by the British squadron under Byng. One cannot read his despatches without receiving a profound impression that Byng was a commander of a very fine type. At no part of the proceedings do we find him unprepared for whatever eventualities occur. Personally, I do not agree with the criticism that he showed a lack of scruple in attacking the fleet of Spain off Passaro before any declaration of war had been made. His orders were clear that, if the good offices of his King, in attempting to compose the differences between the King and Emperor were not accepted, he was to use the whole power of the fleet to resist all who should invade Italy. He came and found Sicily in the hands of the Spaniards; he attempted to obtain a cessation of arms, and received a blunt "No" for an answer. His orders were to use the whole power of his fleet to prevent an invasion; but the invasion had already begun, the Treaties had been broken, and the territory of a friendly Power, for the safety of which his King was a guarantee, had been seized in a time of profound peace. As an invasion could not be prevented, Byng could at least oppose its spreading; and no possible way existed other than the disablement or destruction of that which enabled invasion to be carried on—the fleet.

Again, the purpose of England at this time is spoken of as directed towards an establishment of her naval superiority at all costs. This appears to me a most unfounded deduction; she had certain treaty obligations to fulfil; she endeavoured, by diplomacy, to avoid war; and, if her purpose were to maintain a naval superiority by the immediate crushing of any rising naval Power, it is incomprehensible that she should have offered two important naval bases in the Mediterranean, without compensation, to that very Power. Byng's action in insisting on the destruction of the ships in Messina, is quoted as a further proof of this motive. His reasons, as set forth in his despatches, do not bear out this supposition in the smallest degree; there were ample reasons for decisively making an end of these ships. Disputes as to their possession, which would weaken the feeble ties holding the allies together, were at all costs to be avoided; his decision as to their destruction was made in July or August, at the beginning of the siege. The citadel did not fall till October. How long it might hold out Byng could not predict, but so long as it did so, a close blockade would have to be maintained to prevent the escape of those ships. A spell of bad weather, such as had driven Walton away for a fortnight, might well recur in the late autumn, and enable this squadron to get away and join the ships which, information told him, were fitting out in Spain. The arrival of a concentrated squadron, even a small one, must be a grave consideration to any commander carrying on an extended blockade of scattered ships; a corresponding calling in of his single units would be necessary, and the whole outlying coast be thus thrown open for the entry of reinforcements to an army already larger than that of the allies. And, as I said before, the motive of self-interest might counsel an opposite course to that which he took.

To my mind these operations, from beginning to end, are most interesting, and show Byng in a very high light, whether as a commander, an ally, or a diplomat. His unfailing energy and resource, his readiness at all times to assist the common cause without hesitation, and his fine military instinct, all shine out in his despatches. There are many combined operations, some in which the naval and military forces have been of the same nation, and some in which two or more nations have been allied, which present a less pleasant picture of harmonious co-operation; and the ultimate success of this combined expedition to Sicily of three Powers was very largely due to the harmony in which they pursued their common aim. The man who had the largest share in securing this harmony, influencing the councils in camp and in court, reconciling the conflicting interests alike of seamen, soldiers, or statesmen, was undoubtedly the British Admiral, Sir George Byng.

Captain CHARLES SLACK:—I think this is a most desirable subject for the Institution to discuss, and if more papers on similar expeditions could be brought before us, I am sure it would be to our advantage. I think the lecturer is to be congratulated on the excellent paper he has given us, because he has had to make many researches to supply the details given in the lecture, and there do not appear to be many books available for the purpose. Not only naval and military but political points suggest themselves in a lecture of this kind. Captain Richmond has told us that he has only casually treated the subject, but I think so much of the paper that he has produced, that I feel sure that he could write a most excellent book on the subject with the details he can obtain from the Admiralty and other sources. I hope he will not think I am putting too much work before him, but I do think that if the history of this expedition was to be put into book form it would be appreciated by the naval and military public.

The CHAIRMAN (Admiral-of-the-Fleet Sir Gerard H. U. Noel):—I think it is very doubtful whether any of us have before taken the view which has been described to us of this expedition. We have heard of the Battle of Passaro, which was hardly a battle, but simply a British force chasing a greatly distributed and broken-up fleet, evidently very unprepared for attack. You will remember an incident with regard to that battle which is often quoted. There was a certain Captain George Walton, of the *Canterbury*, who wrote a letter when off Syracuse on 5th August, 1718, describing the action. As has been pointed out by Professor Sir T. K. Laughton, it is a badly expressed letter, but it ends as follows: "We have taken and destroyed all the Spanish ships and vessels that were upon the coast, *the number as in the margin;* and as for them we have with us, hope we shall get into Syracuse this day. I am, Sir, your most obedient and humble servant, George Walton." The ships as shown in the margin are :—

Ships Taken.	*Ships Burnt.*
1—60-gun (Rear-Admiral Mari).	1—54-gun.
1—54-gun.	1—40-gun.
1—40-gun.	1—30-gun.
1—24-gun.	1—fireship.
1—loaded with arms.	1—bomb.
1—bomb.	1—*Saytia.*

That report has often been quoted as very short and decisive, and most of us have heard of it before; but we have not heard much of the whole campaign, and I am sure we have to thank Captain Richmond for showing us how admirably Sir George Byng undertook and carried through a most difficult campaign, which not only required seamanship but military knowledge and diplomacy. The lecture will be a very great addition to the JOURNAL of the Institution, and I am sure I am voicing the opinion of everybody present in offering him our most sincere thanks for it.

THE FRENCH RAID IN IRELAND, 1798, AND SHORT SKETCHES OF OTHER ATTEMPTS AND LANDINGS ON THE COAST OF THE UNITED KINGDOM.

By Colonel H. W. PEARSE, D.S.O. (Assistant Director Q.M.G. Department, W.O.)

On Wednesday, 24th March, 1909.
Lieut.-General H. D. HUTCHINSON, C.S.I., in the Chair.

The CHAIRMAN :—I am very sorry, and I am sure you will be sorry too, that official duties have prevented Sir Horace Smith-Dorrien from taking the Chair to-day as had been arranged. I have had, in consequence, at short notice, to throw myself into the breach. However, I hope that will not affect the interest of the lecture itself, the subject of which seems to be very *à propos* to the topic of discussion of the day, viz., the supremacy of our Navy. I will now ask Colonel Pearse, who is probably well-known to most of you as an experienced writer on military subjects, to deliver his discourse.

LECTURE.

IT is an old saying that history repeats itself, and this, for reasons that are fairly obvious, applies particularly to military history. The great leaders from time immemorial have studied the methods of their predecessors. Napoleon himself, that great and original genius, said that to learn the secrets of war it was necessary to read and re-read the history of the campaigns of the great commanders. Then, again, the frontiers of all countries having been originally determined by their defensive qualities, the localities of the initial stages of all wars have been and must be much the same. As is well known, so many campaigns took place in the low countries, that that region was long known as "the cock-pit of Europe," and it is interesting to note in this connection that Waterloo, the last great battle fought in this region, took place within a short distance of one of the Duke of Marlborough's battlefields. Similarly, an extraordinary number of campaigns took place in the north of Italy in the plot of country which the old military writers styled "the Quadrilateral." There is use in the knowledge of these facts, for a knowledge of the history of the wars of the past enables us to estimate fairly accurately the probable conduct—at any rate, in their early stages—of the wars of the future, and to anticipate almost to a certainty the scenes of their operations. I think, then, that a little time devoted to the raiding expeditions sent by France to operate in Ireland and England in the years 1796-98 will not be wasted. Those raids were, it is true, despatched in peculiar circumstances, and they were consequently defective in many respects. Still, they were not devoid of effect, and a study of their history will help us to realise the probability, or, as I hold it, the certainty that other raids, stronger, better organised, and better timed, will be directed against us hereafter in a period of difficulty.

The French expeditions originated thus: The Directory, which declared war against England in February, 1793, was in its early years too fully occupied by internal difficulties to embark on active operations against her, although from the first the revolutionary leaders looked upon this country as their arch enemy. By the middle of the year 1796, however, the Royalist insurrections in La Vendée and Southern France had been quelled, and the Republic had at its disposal the naval resources of both Holland and Spain, at that time considerable naval Powers. It seemed, therefore, to the Directory that the time had come for a blow against England. Their first design, strongly supported by Bonaparte, was an invasion of England itself; but this project, tempting as it was, was abandoned on financial grounds. France at the moment could not lay her hands on the funds necessary for so extensive an operation. The next best method appeared to be to assist Ireland, which was known to be preparing to revolt, and whose national leaders constantly appealed to the French Republic for assistance, and promised to put 280,000 rebels in the field if France would furnish them with arms and leaders, and throw a small but efficient force into Ireland as a rallying point.

Negotiations continued for a long time. France at first offered to send 25,000 men, under General Hoche, one of the most talented of the young generals of the Republic, but the Irish delegates at Paris considered that a force of 15,000 men would be sufficient, if supplemented by arms and ammunition for the rebels, and this help was eventually promised.

The naval position of England at this juncture must now be considered. It was by no means unfavourable.

England had in 1796 a great fleet, consisting of many powerful squadrons commanded by a body of admirals who had risen to their posts during many years of warfare. In this year, too, and particularly at the end of it, at the time of Hoche's expedition, our hands, from a naval point of view, were unusually free, and an exceptionally large proportion of the fleet was in home waters. This was because the operations of the army on the Continent had been abandoned, and no great undertakings were on foot in the West Indies. Consequently there were no naval lines of communication to be guarded. Finally, just as the French were completing their preparations for their Irish expedition, our fleet, for reasons on which it is unnecessary here to dilate, had abandoned the Mediterranean. "On December 1st, 1796, the Mediterranean was evacuated. For the first time for generations not a single ship of the line lay or cruised in the waters of the Mediterranean."[1]

It seems that at no time since England and the French Republic had been at war had the British fleet so free a hand for the defence of the shores of Great Britain and Ireland; at any rate, as far as external complications were concerned.

Nothing daunted, the French War Department set about its preparations, every detail of which was regularly reported by secret agents to the British Government. It was at first intended that the Irish expedition should sail from Brest in two divisions, each with its own escorting squadron, the first squadron being ordered, as soon as it had landed its troops, to sail with all speed for India, there to make a diversion by aiding Tippu of Mysore, the powerful Muhammadan ruler of the south who was at war with the English.

This plan was presently abandoned by desire of General Hoche, and it was decided to send the whole expedition at once, instead of in two divisions. The concentration of the escorting squadron was delayed by our fleet, but by 16th December all had assembled at Brest, and the expedition sailed that day with a fair easterly breeze. The naval force consisted of 17 ships of the line, 13 frigates, 6 brigs, and 7 transports (43 vessels in all). The troops numbered 18,000, with a large quantity of guns, ammunition, and other stores. They had, however, an inadequate supply of provisions for prolonged operations.

As this expedition, in spite of its successful concentration and start, resulted in failure, its history need not be told at great length.

Suffice it to say that from the first every move of the French squadron was watched by the English frigates, and full information sent to the admirals in the Channel. By dawn on 17th December the greater part of the expedition was clear of the coast and was unmolested, but the *Fraternité* frigate, carrying Admiral Morard de Galles and General Hoche (the naval and military commanders) was missing. Rear-Admiral Bouvet, the second in command, opened his sealed orders and learned that he was to make for the coast of Cork and cruise off the coast there for five days and await orders.

Bouvet steered due west till the morning of the 19th, when he altered course to the north. Soon after this change of course he fell in with some of his missing consorts, and by noon had with him the whole of the expedition except one 74, three frigates, three brigs, and two transports; that is, he had with him 34 vessels. Two days later (21st) Mizen Head was sighted, and soon after the admiral made the signal to prepare to anchor in Bantry Bay.

So far the expedition had been fortunate, and although the weather now changed and became unfavourable, General Grouchy, the senior military officer present, ordered the troops to land. Wolfe Tone, who was with Grouchy, states in his

---

[1] Sir W. Laird Clowes' "History of the Royal Navy."

Memoirs that the troops could easily have landed when they first arrived, and that the opportunity was lost by the indecision of Admiral Bouvet. He adds that Grouchy often lamented to him that he had not thrown Bouvet overboard and landed the troops. The weather, however, became worse, the ships either voluntarily put to sea or were driven from their anchors, and when on 29th December the weather had become fair, Admiral Bouvet found himself nearly alone near the coast and headed for Brest, which he reached on 1st January, 1797.

Not long after Bouvet had left Bantry Bay, Admiral Morard de Galles and General Hoche arrived there with two ships, but could of course do nothing. On their return journey to France these ships, the *Revolution* and the *Fraternité,* on two occasions encountered English vessels, first meeting two frigates and afterwards being chased by Lord Bridport's fleet, but they got away safely and entered Rochefort on 14th January.

The losses incurred by the expedition in its return passage were, however, very heavy. Four large vessels had been wrecked, the loss of life in one ship alone (the *Droits-de-l'Homme*) being upward of 1,000 men. She was wrecked while fighting a severe action with two English frigates. Among the few survivors was General Humbert, whom we shall meet again. Two other vessels foundered in the storms that I have mentioned, and seven were taken—a total loss of 13 ships.

General Hoche's expedition, then, although it reached its destination with little loss, resulted in failure.

A few words may conveniently be said here as to its intended co-operation with the rebellion that was at the time preparing in Ireland.

The chief seat of activity in December, 1796 was the north. The plan urged by Wolfe Tone, the most able of the Irish leaders, was that some of the swiftest ships, carrying 2,000 troops and some light artillery, should sail wide of the coast and land the troops near Belfast. The whole north would then rise. Tone thought that all the troops in Ireland would then be sent to quell the rebellion and to deal with his 2,000 men, and that the fleet might also be withdrawn from the south. The road being thus clear, he proposed that the remaining 16,000 troops should be landed at Cork and march on Dublin, raising as they went the rebels of Waterford, Wexford, and Wicklow. The plan was not a bad one, and had it been carried out, the rebellion of 1796 would have been a much more serious one than that of 1798, bad as the latter was.

Hoche, however, as we have seen, failed, and General Lake, who was sent to reduce the north of Ireland to order, succeeded in his task. The rebellion was checked for a time, but broke out in 1798, again largely in consequence of promises of help from the French Republic. This help came in the form of another expedition, that commanded by General Humbert, which, as we shall see, did succeed in landing in Ireland; but before describing its adventures we must glance at the naval situation at the time of its setting out, and devote a few words to the curious episode of the landing at Fishguard on 23rd February, 1797. This, again, though absurd in its history, was the unopposed landing of a French raiding party 1,200 strong, and on this occasion the landing took place on the north coast of Pembrokeshire. The troops were of bad quality, and had no fight in them, promptly surrendering to the Cardigan Militia and other local troops. Their written instructions, however, were serious enough. They were signed by Hoche, and were to burn Bristol, raise insurrections, and do what harm they could. In Wolfe Tone's Memoirs he says that the burning of Bristol would have cost England £5,000,000. What would it cost now?

Hoche, it may be added, died in Holland in 1797. Just before his death he was planning to cross over from that country with 14,000 French troops, which he had at his disposal, for an expedition to Ireland. Hoche, however, according to Wolfe Tone, wished to land at King's Lynn, in Norfolk, with 14,000 men and maintain himself there till the arrival of 14,000 more, which were ready to sail from France; then to make a dash for London.

Tone condemned this scheme. His own plan was to land with 12,000 men only, with six days' provisions, at Harwich or some point even nearer London, and then to make a forced march of three days on the capital. He believed that once in London, all the desperate characters, including thousands of Irishmen, would join them, and they could make their own terms by threatening to burn London. These schemes were less wild than they appear at a first glance, as the mutiny in the fleet was taking place at the time, and we were undoubtedly dangerously exposed.

We must now turn to the naval situation of 1798, which had considerably changed since 1796, and England had become relatively much stronger in the twenty months that had elapsed.

Spain and Holland were both at war with us, as I have already said. On 14th February, 1797, Sir John Jervis had defeated the Spanish fleet off Cape St. Vincent, inflicting heavy loss, and on 11th October the Dutch fleet was defeated off Camperdown by Admiral Duncan. Both Spain and Holland were thus disposed of for the time. As in 1796 England was employing little or no strength in the Mediterranean and in the West Indies, and in addition to the victories of St. Vincent and Camperdown, which of course greatly improved our position, the disaffection in the fleet had been brought to an end. In the following year, 1798, with which we are more concerned, the naval situation was, therefore, quite favourable. The only change—a very important one, it is true—was the despatch to the Mediterranean of 12 line-of-battle ships under Nelson. The army was, however, in very low water. The force in India had been considerably increased in consequence of the war with Mysore, and the terrible loss of life from disease in the West Indies had caused at home a great reluctance to enlist. The army was much under strength, and in Ireland, in spite of the imminent risk of rebellion, there were next to no regular troops.

Still, to turn our attention to the prospects of raids, the naval situation in home waters was, as I have said, distinctly favourable, and Lord Bridport, who, with several admirals under him, commanded in the Channel, had a great force at his disposal. It was well known to our Government, too, that the French Directory was pledged to co-operation with the Irish rebels, and there was no lack of anxiety in high places nor of vigilance in Lord Bridport and his subordinates.

It is, I think, fair to say that if in any year of our history it should, from ample warning and ample naval defences, have been impossible for an enemy to throw an expeditionary force on our shores, 1798 was that year. This is what happened.

The threatened rising in Ireland, which in 1796 had brought about the despatch of Hoche's expedition, developed in 1798 into open rebellion.

Apart from their natural sympathy (as Republicans) with the cause of rebellion, it was obviously to the advantage of the French Directory to lend every possible assistance to a rising which was calculated to hamper Great Britain in her other undertakings. As in 1796, however, the French were not able to complete their arrangements at the right moment, and the Irish rebellion of 1798 came to a head, ran its course, and was crushed by General Lake at Vinegar Hill before the intended expedition could be got ready. News, however, travelled slowly, and General Humbert set out at last, quite unaware that the golden moment had slipped past.

It had been intended that two independent expeditions should be sent on this occasion, one from Rochefort and one from Brest. Owing to a deficiency of funds, the arrangements at Brest were not completed in time, and the Rochefort division, numbering 1,100 men under General Humbert, set forth alone. It carried with it a large supply of arms and ammunition for the Irish rebels, and sailed from Aix roads on 6th August, 1798. It was conveyed in four ships of war, commanded by Commodore Savary.

The expedition was sixteen days at sea, and on 22nd August anchored off Kilcummin Head, at the mouth of Killala Bay, in co. Mayo. The troops landed practically unopposed on the same evening, and Commodore Savary returned to France, anchoring on 7th September in the mouth of the Gironde.

In Sir William Laird Clowes' "History of the Royal Navy," from which the above particulars are taken, the incident is thus treated: "That Savary escaped the attention, both going and returning, of the very numerous British line-of-battle ships and cruisers in the Bay and at the mouth of the Channel, and of the considerable squadron of frigates on the Irish station is, upon the whole, surprising; but it must be borne in mind that the expedition was one which in itself was impotent, either for good or evil."

Sir W. L. Clowes goes on to explain his meaning by relating the experiences of the second and larger expedition, consisting of ten ships, under Commodore Bompard, carrying 3,000 troops, which sailed from Brest on 16th September, with the object of joining hands with General Humbert, whom we have left for the moment at Killala.

Commodore Bompard's squadron, in which was Wolfe Tone, unlike that of Savary, was watched from the start, but nevertheless made its way to the Irish coast, heading for Lough Swilly. This was done because Bompard knew that Humbert intended to work northward from Killala.

Whether or not Bompard could have landed his troops at Killala is not quite clear from Laird Clowes' narrative; but, speaking subject to correction from a naval authority, it seems that he could have done so on 11th October. At any rate, he was not brought to action until the following day, when Commodore Sir John Borlase Warren fell upon him off Lough Swilly with a squadron of considerably superior strength. Bompard, after a gallant fight, was defeated with a loss of four ships captured and heavy casualties in killed and wounded.

We will now return to Humbert's expedition, characterised by Sir William Laird Clowes as "impotent for good or evil," which we left landing unopposed at Killala on 22nd August, 1798. The French troops numbered 82 officers and 1,017 of other ranks, under the command of General of Brigade Humbert, an experienced and practical soldier. The rank and file of the expedition consisted of veterans of the armies of Italy and the Rhine, who behaved throughout their service in Ireland with exemplary steadiness and moderation.

Humbert had with him muskets and ammunition for 4,000 Irish whose services had been promised by the revolutionary leaders, and about one thousand came forward on 23rd August and were hurriedly equipped and armed. Horses also were provided for the officers, the artillery, the transport, and for a party of 57 cavalry soldiers who formed part of the expedition. Sufficient carts and cars were collected for the carriage of supplies for the small column. Humbert saw at once that he had arrived too late, and that his landing place had been badly chosen. Connaught showed no enthusiasm, for the very recent losses of the rebels in Wexford and the other eastern counties had taken the heart out of the United Irishmen, who but six months earlier had boasted that they could put 280,000 men in the field. Reinforcements, too, had arrived from England in the shape of four regiments of Regular infantry and 12,000 Militia, and Lord Cornwallis had close on 100,000 men at his disposal, given time to collect them. (I must remind you that these 100,000 men were almost all Militia and Yeomanry, the latter very recently and hurriedly raised; the artillery, though of good quality, was very weak, and the Regular cavalry had been so long scattered in small detachments over the country as to be in a very unsatisfactory state.)

This large but weak garrison had, under political pressure, been very badly posted as regards defence by Lord Carhampton, who was Commander-in-Chief at the beginning of the Irish troubles. Sir Ralph Abercromby had begun the task of concentration during the few months of his command, and General Lake had carried on this work, but still to collect any considerable force in the West of Ireland was at the moment of Humbert's landing a work of time. Humbert therefore found that no force of dangerous strength could reach him for several days, and being a bold and enterprising soldier he decided to advance, trusting that some unexpected successes might encourage the Irish to come to his aid in large numbers, and that meanwhile Bompard's expedition, whose arrival he daily expected, might join hands with him. To aid its landing, and as a base for himself, Humbert formed a depôt of 100 men at Killala, under an officer named Charost, who almost immediately obtained enough Irish recruits to exhaust his supply of arms. These men were, however, of poor quality, and showed no desire to take the field. The bold spirits of the neighbourhood had doubtless all come in on the first day.

Humbert wasted no time in inactivity, but on 24th August, the second day after his landing, sent a detachment under Colonel Sarrazin, his second in command, to reconnoitre the town of Ballina, about six miles to the south-east of Killala. Finding that no serious opposition was yet prepared, General Humbert advanced with his main body and occupied Ballina in the evening. The French troops that advanced numbered 1,000 men, and were accompanied by armed Irish, whose strength has been variously stated at from 1,000 to 2,500 men. Having made some prisoners, the French returned to Killala.

The news of Humbert's landing reached Dublin that same day (24th August), and British troops were now rapidly approaching the scene of action. Major-General Hutchinson (afterwards Lord Donoughmore), who commanded in Connaught, had not waited for orders but had promptly collected the available troops from Galway, Tuam, Gort, and Athenry, and on the day that Humbert occupied Ballina was at Castlebar, some 26 miles to the south, with about 1,600 Militia and Yeomanry, 80 men of the 6th Regiment, and a detachment of the Royal Irish Artillery with 11 guns. There was on the same date a smaller force, some 1,200 men, under Major-General Taylor, even nearer to the French. Taylor had been ordered to join Hutchinson at Castlebar, but had taken up a strong position at Foxford, 16 miles from Castlebar and only 10 from Ballina. Lord Cornwallis himself was marching from Dublin towards the invaders, collecting troops as he went, and sent Lieut.-General Lake forward to assume the command in Connaught. Lord Cornwallis had been unable so far to learn what was the strength of Humbert's force, and he had been informed that other expeditionary forces were either on the sea or preparing to embark. He was therefore naturally uneasy at the advanced positions taken up by General Taylor and General Hutchinson, and desired to have a man on the spot with more war experience than Hutchinson, the senior of the two. Lord Cornwallis has been accused of timidity in dealing with Humbert's expedition, but it must be remembered that the British Government had been warned in March by their secret agents in France that 275,000 troops, under all the leading generals of the day, including Bonaparte, were ordered to be within 24 hours' march of the French coast. The best informed military opinion in England was at the time that 40,000 troops, with the requisite proportion of guns, could be landed in Ireland.[1] Lord Cornwallis therefore had to take his measures with caution.

General Lake arrived at Castlebar at 11 at night on 26th August, and assumed command. He ascertained from Hutchinson that his troops were posted in readiness to meet an attack from the direction of Foxford. Hutchinson believed that this was the only practicable line of advance for the French, who must, as he thought, cross the river Moy by the bridge at Foxford, and the inference is that he had not examined the ground between himself and the French. It would not be fair to blame him for this omission without a full knowledge of the circumstances. It is quite possible that he had no opportunity of reconnoitring; his time was certainly short. Whatever the reason, the fact is clear. Neither Hutchinson nor anyone on his staff was aware that his position could be turned. The population for the most part was hostile to England and friendly to the invaders. Humbert therefore received the information that was denied to Hutchinson.

We will now return to Humbert, whom we left at Killala on the night of 24th August. On the 25th he resumed his advance at eight in the evening, and marched for four hours towards Castlebar. He then heard that General Taylor was at Ballina, in his rear, and fearing an attack on his base at Killala, hurriedly turned in his tracks. On reaching Ballina, Humbert found that Taylor had retreated to Foxford, and he therefore made a halt of 10 hours to rest his weary troops. At 3 p.m. on 26th August, Humbert again advanced towards Castlebar; but this time instead of moving along the high road to Foxford, which he knew to be blocked by Taylor, he marched, guided by an Irish priest, across the hills, following a little-known track, and came in view of Hutchinson's position before Castlebar, at about six in the morning of 27th August. The surprise was, however, not complete, for a loyal yeoman, whose farm was close to the mountain road, was visiting his cattle at 3 in the morning and saw a column of troops in blue uniform marching rapidly. He at once mounted his horse, galloped into Castlebar, and gave the alarm. The troops were quickly got under arms and placed in position on the heights above the town in the following order:—In the first line were the eighty men of the 6th Regiment, the Kilkenny Militia, and a detachment of the Prince of Wales' Fencibles. The guns were slightly in advance of the line. The Fraser Fencibles and the Galway Yeomanry formed the second line; and the mounted troops (part of the 6th Dragoon Guards and the 1st Fencible Cavalry) were drawn up in line with them. The reserve, 4 companies of the Longford Militia, was posted in a valley, in rear of the Kilkenny Militia.

---

[1] Castlereagh Correspondence.

At 8 a.m. the French arrived within range of the British guns, and Humbert, halting his column under cover of the ground, rode forward and made a hasty examination of the British position. He then, without hesitation, advanced to the attack, placing his Irish Volunteers in the centre, with a weak French battalion on either flank. He held in reserve his third battalion and his mounted men, now about eighty in number.

The British guns, well and steadily served, opened an effective fire, directed chiefly at the French battalions in the first line, both of which were checked. The Irish in the centre pressed forward bravely, but being received by a heavy fire from the guns, at close range, broke and dispersed, taking no more part in the fight. The check of the French was of very short duration, for Humbert, seeing that the Irish Militia opposed to him had opened a wild and harmless fire, at once brought up his reserve, whereupon the battalions of the first line, veteran soldiers, quickly rallied. Sarrazin, the second in command, placed himself in front of the Grenadier battalion (which was on the left of the first line) and, bringing the bayonets to the charge, rushed forward with the Grenadiers in open order, followed by the remainder of the French troops. When they arrived within 150 yards of the British force, the Militia broke and fled in uncontrollable panic, leaving the guns to their fate, in spite of the efforts of all the officers and of the non-commissioned officers of the Longford Militia, who stood their ground after the regiment had broken. The detachment of eighty men of the 6th Regiment behaved well, and the Royal Irish Artillery, under Captain Shortall, were also steady to the last. Of the mounted troops a small body of Yeomanry, under Lord Roden, alone behaved well, the remainder quitting the field in a disgraceful and causeless flight, for the French were, of course, unable to make any effective pursuit. Deserted by the cavalry and by a great part of the Irish Militia, who openly joined the French, a few brave infantrymen rallied in response to the appeals of their officers, and, firing as they went from the successive walls and enclosures, formed up for a stand on the bridge of Castlebar. They had with them one light gun, manned by the survivors of the Royal Irish Artillery, which was placed on the bridge. The French, coming up, attacked this small party, which was eventually compelled to retreat after losing half its number. The British loss at Castlebar was returned as 53 killed, 34 wounded, and 279 missing—the last-named having fallen in the retreat or deserted to the enemy. The French casualties were 186, chiefly caused by artillery fire, and were heavy in proportion to their strength.

It is impossible to say positively what caused the misconduct of the troops at Castlebar, and their subsequent panic flight to Tuam, 30 miles from the battlefield. Something must, doubtless, be attributed to disaffection, for, according to French statements, 500 of the Kilkenny and Longford Militia deserted and joined them during the action; but sufficient explanation of the defeat is to be found in the superior quality of the French troops and the weakness of discipline of nearly all Hutchinson's force. There was really no great disparity of numbers between the two forces, and to Hutchinson's heterogenous force, hurriedly gathered together and strangers to one another, and, in some cases, to their commander, the sight of Humbert's veterans rapidly advancing on them with their bayonets at the charge, must have been appalling. The "races of Castlebar" are an unpleasant memory, but we need not use too hard expressions in regard to the troops who were beaten that day. There were traitors among them, but many were loyal and brave.[1] They were defeated because they met in the open field better troops than themselves.

We need not dwell on the history of the flight to Tuam. There General Lake succeeded in rallying his troops, and at once sent news of the defeat to Lord Cornwallis, who was at Kilbeggan with 8,000 men. Cornwallis advanced at once to Athlone, and, on 30th August, was at Ballinamore. On 4th September, he arrived at Hollymount, within 13 miles of Castlebar.

Up to this date Humbert had not moved after his victory, for he had been disappointed in his hope of a general rising of the country in his favour. Hundreds of recruits, it is true, had joined him, but they were ignorant and undisciplined, and could not be made quickly into soldiers by officers who did not know their language.

The approach of Cornwallis, however, made further delay impossible, and on the morning of 4th September Humbert set out, marching rapidly towards Sligo. Here he hoped to approach Bompard's expedition, the fate of which we know, but which he expected to land shortly in that direction, and he hoped to raise a rebellion in that part of the country where there were few British troops.

Lord Cornwallis had blamed neither General Lake nor General Hutchinson for the disaster at Castlebar, but entrusted to Lake the command of Taylor's force from Foxford, in addition to the loyal remnant of Hutchinson's force. With this body of troops Lake was directed to follow in Humbert's track, but as contradictory reports of the strength of the French had been received, he was told not to hazard a general engagement. Colonel Craufurd, afterwards a famous Peninsular soldier, was despatched with a small body of Yeomanry to harass the French column and keep touch with it. Lord Cornwallis himself marched towards Carrick-on-Shannon, in order to prevent a possible dash towards Dublin.

---

[1] They were the fathers and brothers of the men who, under strict discipline, fought so loyally and well for England in the Peninsular War.

Humbert's column approached Sligo early in the morning of 5th September, and here met with an unexpected check. He was opposed at Collooney by a small part of the Sligo garrison, which, under Colonel Vereker, had taken up a strong position there to check the French advance. Both sides were mistaken as to the strength of their enemy, Vereker believing that he only had to deal with a small detachment from Humbert's column, while Humbert assumed that Vereker's troops were the advanced guard of a large force. Vereker had, in fact, with him no more than 270 of the City of Limerick Militia, 30 dragoons, and 2 guns, but with this small force he held his position for an hour, and then retired in good order. His casualties were 9 killed and 22 wounded, and those of Humbert were said to be between 70 and 80. Colonel Vereker and his small force behaved admirably.

Leaving Sligo on his left, Humbert marched on at 10 p.m., spiking and abandoning his captured guns, and by noon on 6th September, he had reached Manor Hamilton, 22 miles from Collooney.

At this point Humbert changed his directions in consequence of exaggerated reports which reached him of risings in Longford and Westmeath. He, therefore, headed for Granard, and the British troops were thus enabled to surround him.

Marching south from Manor Hamilton, Humbert arrived at Drumkiern at 7 in the evening of 6th September. Here Colonel Craufurd, who had clung persistently to the French column, demanded a capitulation, which was refused, and at 9 next morning Humbert crossed the Shannon at Ballintra, Craufurd seizing the bridge before the French had time to destroy it behind them.

On the same day Major General Moore (afterwards Sir John Moore), was despatched by Lord Cornwallis with 2,000 men and placed under General Lake's orders, so that Lake was now strong enough to attack. Lord Cornwallis himself was at French Park on the 6th, intending to cross the Shannon at Carrick, and to move up the left bank of the river. Cornwallis did, in fact, begin to cross the Shannon on 7th September, on which day, at 6 p.m., Humbert arrived at Cloone, with Craufurd still hanging on his flank, and closely followed by Lake's force.

The French infantry, which had shown the remarkable marching power of that army, was now exhausted by constant night marches in wet weather, and though a rapid move eastward was his only chance of escape from the converging columns of the British, Humbert was compelled to give his men a night's rest. At 5 a.m. on 8th September he again set ut, heading for Granard, but at dawn that day Lord Cornwallis had arrived at Mohill, almost in view of the French, and Humbert was at last brought to bay.

Lake now received orders to attack the French rearguard, and bringing up his infantry at the best pace they could set after constant marching for four days and nights, he despatched some of his mounted troops to strengthen Craufurd, who at once attacked the French rearguard near Ballinamuck. The rearguard, 200 strong, was compelled to surrender.

Lake then attacked the main body with his infantry, and after half-an-hour's fighting, Humbert's whole force surrendered. A French narrative, which appears to be very accurate, gives Humbert's numbers at the time of his surrender at 96 officers and 844 men, and agrees with General Lake's report in saying that the Irish portion of the force numbered 1,500 men.

Humbert's achievement was, in many respects, a remarkable one, though, from want of the expected co-operation of the other expedition, it soon ended in failure. Single-handed, however, he had kept the field for 17 days with eleven hundred Regular troops, very weak in mounted men and artillery, in a country garrisoned by 100,000 men.

It is true that Humbert failed in his main undertaking, which was to place himself and his troops at the head of an Irish national rising; but this was through no fault of his, for he was sent with an insufficient force and at the wrong moment. Still, he undoubtedly created a diversion, which occupied the garrison in Ireland for a considerable time, and might have had most serious results, and he deserves much honour for his courage and enterprise, and also for the admirable discipline which he maintained.

Humbert was well treated by our Government, and was soon released from captivity. He was in no way discouraged by the fate of his expedition, for he immediately offered to repeat his exploit, provided that he were given a force of 12,000 men.

In presenting for your consideration this sketch of the four French expeditions against Ireland and Great Britain in the years 1796-98, I do not propose to overstrain the parallel between those raids and the raids which will be attempted when, hereafter, England is again engaged in war with a European Power.

The French raids were launched by the Republic at a time of great difficulty, when the Revolution had destroyed the resources and organisation of France, and when stores and money for war did not exist. The Directory were misled, too, by false information sent them by the Irish rebels.

With all these drawbacks, we see that the raids of Hoche, Humbert, and Bompard all reached the Irish coast; that the filibustering raid against Bristol landed in Wales; and that Hoche was ready and anxious to attempt a landing in Norfolk.

True it is that all these raids failed of their intended effect, but this was because they were badly managed by the Directory, which had its hands full of other undertakings, to which they attached greater importance.

We can expect no such good fortune in the future. Raids will be directed against us again at a time when (as in 1796-98) we have few regular troops in the United Kingdom, and these raids will not fail, as did those which I have sketched, from inadequate strength or from want of co-operation. They will not stand, as did the expedition of Hoche and Bompard, at the mercy of wind and tide. The crossing of the narrow seas is now a matter of hours—then it was the affair of days and even weeks. As for the probable strength of the raids of the future, we must look to the great forces available and the fact that three or four times the strength of Humbert's Expedition can be conveyed in one large ship of the present day.

If hereafter our navy is unable, as it was in 1796 and 1798, to prevent hostile expeditions from reaching our shores, we may then be certain that the consequences will be infinitely more serious than they were then.

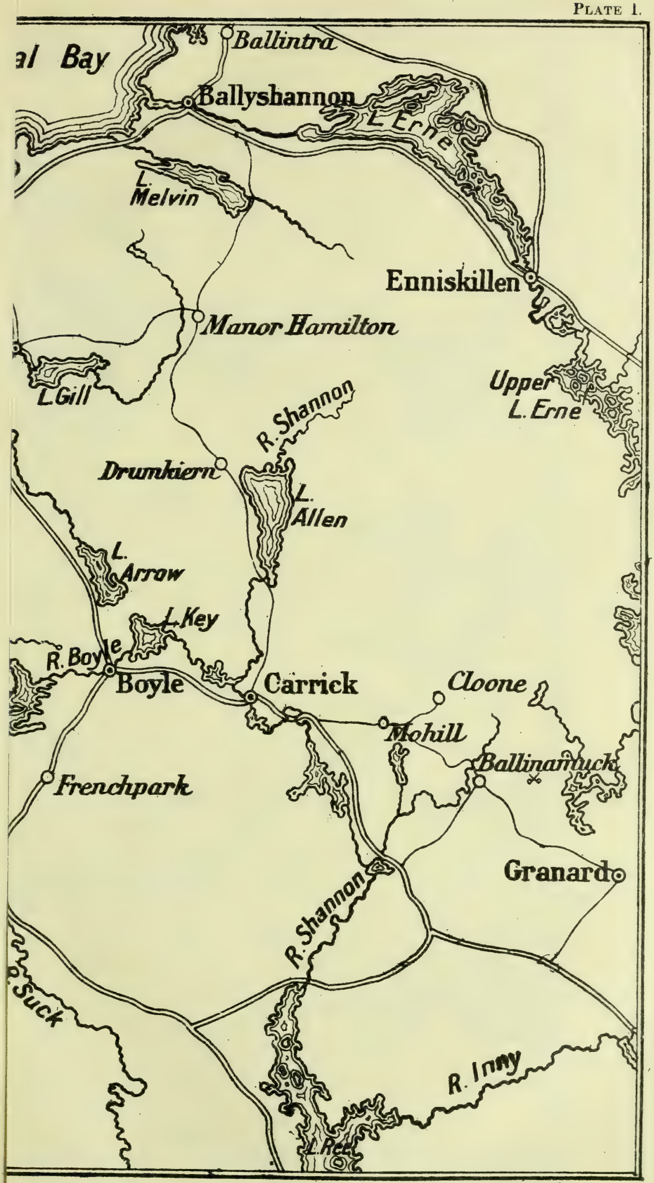
The lessons of the French raids are many, and will suggest themselves to you, but I may be allowed to point out two as of special importance. The first—a naval point—that these crossings were effected, not by surprise, not in consequence of a naval disaster, nor in the absence of the fleet in distant waters, but after full and repeated warnings, and at a time when our Home Fleets were exceptionally strong, and were commanded by famous seamen.

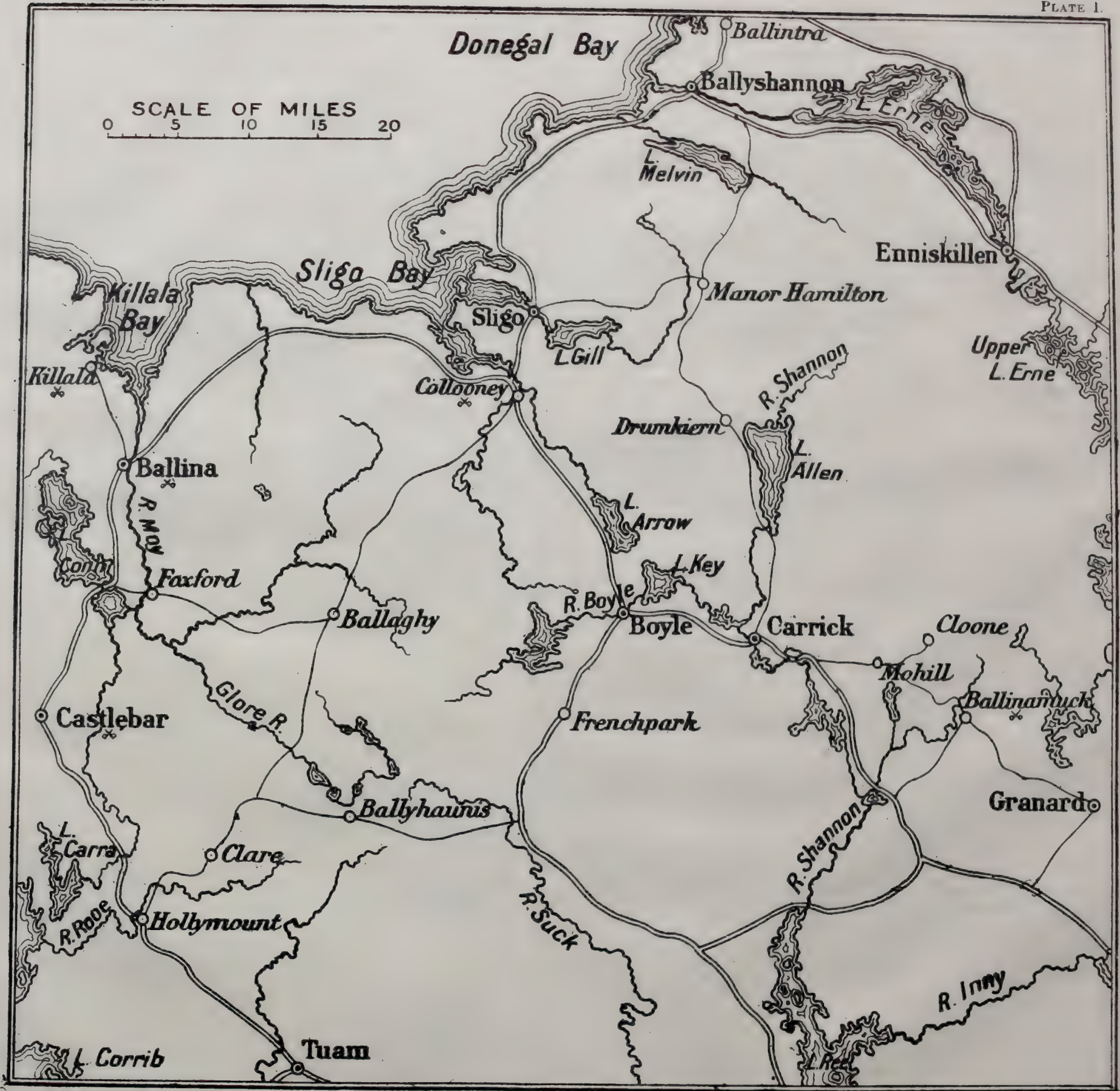
The second point—a military one—is even more clear. The sad story of "the races of Castlebar" stands as a permanent illustration of the impotence of badly-trained, under-disciplined troops, against a force of veterans.

The story of the French raids, which I have very imperfectly told to-day, surely warns us that in future wars we must expect similar but better organised and more formidable raids; that we must expect them, or some of them, to reach our shores, and that we must have a highly-trained, highly-disciplined, and thoroughly effective defence force always ready to deal with them. This is the duty specially committed to the Territorial Force, which, in the absence of the regular army at the seat of war, wherever it may be, will be solely responsible for home defence. To fit itself for this arduous and vitally important task, sets before the Force, as a clear duty, the attainment of a high standard of efficiency for war. That they may be enabled, by timely preparation (for the discipline that makes an army is not the work of weeks or months) to reach that standard, must be the fervent hope of every Englishman who can understand the plain teachings of history.

Lieutenant A. C. **Dewar**, R.N. :—All officers must be very much interested in the question which Colonel Pearse has brought before us to-day. I think there can be no doubt as to the possibility of a fleet of transports of a certain size crossing the North Sea, or any other sea, without being observed by our ships. I daresay some of you have read a very interesting article which appeared in the *Contemporary Review* for February on the subject of invasion. The author endeavoured to prove that transports could not cross the sea without being observed; but there was a very transparent fallacy underlying the whole of the article. It treated of nothing but a force of, I think it was, 150,000 men—a very large force, anyhow; and it said nothing about these smaller

PLATE 1.


al Bay
Ballintra
Ballyshannon
L. Erne
L. Melvin
Enniskillen
Manor Hamilton
L. Gill
Upper L. Erne
R. Shannon
Drumkiern
L. Allen
L. Arrow
L. Key
R. Boyle
Boyle
Carrick
Cloone
Mohill
Ballinamuck
Frenchpark
Granard
R. Shannon
R. Suck
R. Inny
L. Ree



J. J. K. & Co., Limited, London.

forces of 12,000 or 15,000 men, of which Colonel Pearse has been speaking. Most of us are now agreed that, under certain weather conditions, forces of that size could cross the sea without being seen by our fleets. Having crossed the sea, it is merely a question of the time the enemy would take in landing their troops. If we could get our torpedo and submarine flotillas, or any other ships, to attack them while they were landing, well and good; if not, the repulsion of the attack would depend entirely upon the military and the forces they had at their disposal. I would also like to ask whether it would be necessary nowadays to send any troops to resist a force landing at such a spot as Sligo Bay in Ireland? An enemy landing there could not do very much damage.

Captain B. E. SARGEAUNT (12th Battalion The London Regiment):—As the lecturer has alluded to the raid in Wales, which directly concerns the island on which we live, perhaps a few words with regard to that raid might be of interest. The expedition, consisting of two frigates, one lugger, and one corvette, with a force of 1,400, sailed out of Brest, and first anchored at Ilfracombe, where the raiders did considerable damage by scuttling several of our merchantmen. They did not leave until the North Devon Volunteers appeared, and then they set sail, crossed the Bristol Channel, and landed at Fishguard. They chose a position which was very difficult for landing. The cliff was fairly steep, and it is recorded that they only gained the summit by climbing up on their hands and feet, throwing their muskets in advance. The enemy appeared on the morning of the Thursday, and by the evening of the same day a large local force was ready to receive them. This force, Colonel Pearse has told us, consisted mainly of the Militia, but I should like to ask Colonel Pearse whether I am not correct in saying that the bulk of the force was comprised of Fencibles, who exactly corresponded to the Territorials of to-day? There were 300 Fencibles from Newport and Fishguard, and 100 from Pembroke. There were also Lord Cawdor's troop of Yeomanry and 200 of the Cardigan Militia. The whole was under the command of Lord Cawdor, to whom the entire raiding party surrendered without a shot being fired. There also existed at this time what were known as armed associations, and perhaps it might be of interest to some if I said a few words about them. One portion of these associations was comprised of armed men, who corresponded very much to the Volunteers. The other portion, though unarmed, was considered to be able to do useful service by performing the duties of pioneers, drivers and boatmen, and it was also supposed to drive to places of security for their own troops the cattle and sheep, and to harass the enemy, as far as possible, by destroying bridges, burning crops, etc. It had also to look after the women and children, and perform other duties of that kind. It seems to me that at the present time some attention might be given to this matter, especially in connection with men who have seen service in the Territorial Force. There are many men of a non-military age who might be able to render services similar to these when required. They would, of course, have to be properly enlisted and given a uniform, and they would parade for instruction so many times in the year. I do not wish in any way to advocate or associate myself with the present mania for forming rifle clubs. I think these clubs are doing a tremendous amount of harm. They seem to me to be mere shirking places for men who ought to be in the Territorial Force, and they are interfering very largely with the recruiting of that force. The men join these clubs because they do not wish to endure the discomfort of discipline and other sacrifices which obtain by joining the Territorial Force. I do not think such rifle clubs are to be encouraged. The men comprised in them would be worse than useless in time of need, for they would not submit to discipline. Of course, I do not wish to say one word against Rifle Associations, which are very different things. The late Volunteer Force and the Territorial Force owe an immense amount to the Rifle Associations throughout the country for the good they have done to them in furthering their shooting, especially to the National Rifle Association. There is a great difference between Rifle Associations and Rifle Clubs. The Rifle Clubs in many parts of the country, I am sorry to say, are largely run by publicans who encourage them so as to sell their liquors to the men who join.

T. M. MAGUIRE, M.A., LL.D. (Barrister-at-Law, Inner Temple):—As no one seems to be very desirous of dealing with this Irish topic, I think I may venture to say a few words; but first, as a Celtic native of one part of Ireland, whose Sept fought for centuries against the English, a part which, in case of war, Lieutenant Dewar would apparently abandon, and as having relatives in the other province which he would leave naked to our enemies, I most warmly urge on the audience not to abandon any part of Ireland. Quite apart from any duty to our fellow subjects, consideration of strategy, ever since the consolidation of the English and other monarchies at the close of the 15th century, all through the 16th and 17th, and, as the gallant lecturer has proved, in the 18th century, Ireland, especially when a large proportion of the natives were hostile, has been of great strategic importance. Even now, I take it, that any naval men here present will agree with me that the ports of Ireland, like Berehaven, Loch Swilly, Queenstown, and Galway Bay might be of vital importance. If we lost for a while command of the Channel, Ireland as a flank position, enabling our mercantile marine to get safely round to Glasgow or even Liverpool, and thence supply Southern England by rail, would be of no small service. Indeed, Ireland might become, especially in case of a war with the United States, as important, with regard to Great Britain, as the British Isles collectively are with regard to Europe at large; they are great outlying works, as it were, commanding the whole of the western entrances to European Seas. Therefore be warned by the lecturer's clear account of a few raids to put all your houses so in order that no other Power may be tempted to follow the example of the French, 1796-1798; at any rate, I beg of you not to hearken to our able naval friend, Lieutenant Dewar. Now as to the excellent speech of Captain Sargeaunt, I am in a difficulty about the Rifle Club. It has been my *rôle* in several capacities "to teach the young idea how to shoot," and accordingly I have recently become a target for his attack as having become a Vice-President of a Rifle Club. I see he disapproves, but then I agree with him that no Rifle Clubs, no half-drilled Militia, such as evaporated with speed at Castlebar, no Gambetta levies, no Spanish Guerillas, no hordes of Cossacks, no Tyrolese marksmen ever have saved a State; nothing but a race of military men, thoroughly well trained and equal in every respect to a possible adversary ever saved a State. Not even my fellow Clansmen—fierce and brave warriors, animated by religious zeal—and helped by Spain at her best, could save Ireland from Queen Elizabeth's forces. My namesakes and the O'Donnell's, and O'Neill's, and all the Irish opponents of the English, 1590-1600, the victims of Cromwell at Drogheda, 1649, and of William III. at the Boyne, 1690, and of Aughrim, and of Limerick, and the rebels of 1798, even helped by brave Frenchmen, fell in turn; but after desperate struggles, 150,000 perished, 1796-1800, alone. I wish Mr. O'Donnell, who knows more about this matter than I do, would throw some light on the strategy and tactics of Irish Irregulars. Why, but for Wellington's Regulars, the Spanish could not have held out one year after their small triumph at Baylen, which was soon followed by the disastrous defeat of Ocana. Now as to sea power, it is vital to England, but sea power alone never saved any nation; it must be supplemented or complemented by an army. Captain Sargeaunt was not full enough in his account of the raid on Wales. In point of fact the forlorn gang of *enfants perdu* were more frightened by the appearance of crowds of Welsh women in red cloaks and tall hats, whom they mistook for the advance guard of armies, than by the Militia. But in 1798 we had unquestioned sea power; we had just defeated the Dutch Navy at Camperdown, and the Spanish Navy at St. Vincent, and were about to defeat the French Navy at the Nile, and yet Bonaparte brought an expedition across the Mediterranean to Egypt, which he conquered, and French expeditions landed in Ireland. I have preached this doctrine again and again, and in vain; but I now hope even M.P.'s will soon see the force of Colonel Pearse's lessons and warnings. The gallant lecturer says that many members of the families of the rebels of 1798 fought with rare distinction in the Peninsula and at Waterloo. I bethought me of the wild cry of the men of Connaught when they drove back the columns of Massena at Busaco "Faugh-a-Ballaugh." What about the North British Celts? What about Waterloo?

"And wild and high the Cameron's gathering rose
The War Cry of Lochiel, which Albyn heard,
And heard to have her Saxon foes
With the breath that fills
His mountain pipe, so fills the Mountaineer
With the fierce native valour that instils
The stirring memory of a thousand years."

Where are the mountaineers of the hills and of the glens? Lost in the slums of Glasgow! Where is the granddaughter of Sweet Highland Mary? A slave in a machine-worked mill! We are losing our manhood and our womanhood. The fountains of our future race are being choked with the rubbish of the Manchester School. I followed with intense interest the records of Ireland and the designs of Hoche. Attack London! We must take precautions to make such an invasion not only unpracticable but also unthinkable. Why, any good raid on our Isles now which, from a financial, social, and credit, and food supply point of view, or from the point of view of distribution of population, bear no resemblance to their condition in 1796-1798, would do us more harm than it would do France or Russia if six fully equipped German corps passed the Moselle or the Niemen. Make up your minds to make your naval and military position absolutely secure. Your resources are now fourfold relatively to what they were as against Napoleon. Meanwhile, alas! for the Celtic races; and alas! for the Empire which has such soldiers. It has withered up by the banks of the Shannon and by the shores of Lough Neagh, and by the walls of Antoninus; and the septmen of Ireland and the clansmen of Scotland are gone! I have seen thousands of them wending their way to the Western main—"a melancholy band"—to build up greatness in America. I would, if prayers availed, pray to see my namesakes with the O'Neill's and the O'Donnell's fighting, to the death occasionally, and, as a rule, living a natural and healthy life, and rearing healthy children, than to see them becoming adjuncts of mechanics, as I have seen them recently in the rich and dreadful manufacturing towns, shades of decay and death, in Lancashire. We have had wars and raids, and we may have wars again, but we will not be ruined by them. We will be ruined by ourselves—by luxury, ignorance, and games. Look at the mothers! Not fit to bear children! Why, when I was a boy 100,000 Irishmen, "all tall men of their hands," served under the Union Jack! Where are their successors? Where are the successors of the Highlanders of 1813? Where are the bold peasantry of England—her pride and the "nerve of her army," as Bacon says? Gone! I beg my audience to remember that the only security against raids and invasions is a race of military men. Now we breed generations of men without brains or bodies, not one in three fit to be a soldier. Had I time and a map I would illustrate all the strategical problems of Ireland, and all its invasions, and all the invasions of England. But my time is up, and I must content myself with thanking the lecturer for the information which he has given us about a fateful period of European, and especially British, history, and for his lessons and for his warnings.

Colonel J. A. ANSTICE, C.B. (4th Battalion Shropshire L.I.):—I am sure we shall all join in heartily thanking the lecturer for his very able and exhaustive lecture. He has treated of a subject which must be in every man's mind at the present moment. There are two points on which I should like to venture to make a few remarks, to a certain extent they are local ones. There was one very interesting part of the lecture, where the intended raid on Pembrokeshire was mentioned, and part of the scheme of that intended raid was the sacking and the burning of the City of Bristol. I believe at that period the value of the City of Bristol was put at something like five million pounds. The lecturer asks us what would be the present value? I shall not attempt to answer that question, but I merely mention this particular locality because I have the pleasure at the present moment to be the Chairman of the Gloucestershire Territorial Force Association, part of whose area is the City of Bristol. Now, I do venture to say—although it may be a piece of vanity on my part—that at the present moment the forces of the County of Gloucester, which includes the City of Bristol, will be up to their authorised strength, namely, something like 5,000 men. We combine a force of all arms. As to what we are worth when we are formed is a matter I leave to military experts to answer. Still, we have carried out our mission as far as we can, and on the 31st of this month we shall be able to present a force numbering 5,000 towards the defence of the Empire. I am very glad to notice that at the close of the lecture, when we get towards what is commonly called the peroration, the lecturer does not, in a wholesale manner—like so many lecturers—condemn the Territorials, saying they are not worth anything. All the lecturer does is to give us wholesome and sound advice, and asks us to bring our troops up to military standards as soon as we can. I do believe that the Territorial Forces of this country will reach that standard, and I hope other counties will follow the example of Gloucestershire in this respect. There is one other point. Captain Sargeaunt spoke of rifle clubs, and he rather condemned them wholesale. I do not quite agree with him. I think rifle clubs have their mission to fulfil. Of course, there are dangers in regard to them which have to be avoided; we do not want to bring a lot of young men into these rifle clubs who ought to be in the Territorials—

that we all agree about. But I still think they are useful things for young boys who are too young to join the Territorials, and they are also very good things for men who are too old; they can go and teach the youngsters how to shoot. I believe that, under proper supervision, these rifle clubs will do a good deal. I speak as a very old Volunteer. I have never been in the Regulars, but I have had something like 45 years' experience in the Volunteers. I am one of those who belong to the class of men who do what they can, in their humble and undemonstrative way, for the defence of the Empire, and who work for nothing. We in Gloucestershire have tried to build up a force and maintain a force which may or may not be sufficient to repulse the organised strength of an enemy; but we have carried out our mission as far as we can, and I have every hope we shall come up to the scratch. I feel sure we shall all cordially thank the lecturer for his address, and for the word of encouragement he has given to the Territorials.

Captain CHAS. SLACK :—I cannot agree with what the last speaker has said about rifle clubs; I rather agree with what Captain Sargeaunt has said in reference to them. These rifle clubs are not organised, and therefore their value is very much depreciated. Until they can be turned into Territorials I do not see how such clubs can be regarded as a practical force. With regard to the lecture, the prominent feature which comes out in it is the want of communication and information, which both sides seem to have required to have met with any success at all That state of things will not compare at all with the present conditions of warfare. We have now telephonic, telegraphic, and heliographic communications everywhere, and it does not appear likely that any hostile enemy can take up a position against this country without it being known almost instantly.

Colonel H. W. PEARSE, D.S.O., in reply, said :—There are very few remarks which I need make in reply to what has been said. Lieutenant Dewar agrees with me that expeditions will be able to land in the future as they have landed in the past. It is quite clear that they can, and the army will have to deal with them. That is exactly the intended point of my lecture—that we must have a large and efficient force to deal with such expeditions, because the expeditions of the future will be large, will land at the same time at different parts of the country, and will do a great deal of mischief. Therefore the sooner they are crushed the better. Captain Sargeaunt, I think, quite correctly described the history of the Fishguard Expedition. I dealt very briefly with it, because as it happened, the expedition proved ineffective. I quite agree with him in his main contention that no forces but those under proper military discipline are trustworthy for the defence of the country. With regard to Dr. Maguire's interesting remarks, I fully agree with him as to the vital importance of the defence of Ireland to the safety of England, and I am sure that importance is fully recognised by those whose duty it is to lay our military plans. I also cordially agree with him as to the effect on our military strength of the wholesale emigration from Ireland, which has weakened that country so seriously. I must thank Colonel Anstice for his appreciation of the intention of my lecture, which, as he says, was to hold up an ideal of training for the Territorial Force. He gives us a very interesting suggestion as to the proper use of rifle clubs, which, as he says, may do valuable work in training those to shoot who are not old enough to go into the Territorial Force. In regard to men who are too old for the Force, they could, as he suggests, devote their energies to training the young to shoot. I also agree with Captain Slack and Captain Sargeaunt, that there are rifle clubs and rifle clubs, and some of them, no doubt, do harm.

The CHAIRMAN (Lieut.-General H. D. Hutchinson, C.S.I.):—In rising to close this discussion, I will say first that I am sure you are all agreed that Colonel Pearse has given us a most interesting lecture; and that the facts he has related to us, and the reflections to which they give rise, must send us away full of serious thoughts. This lecture was prepared by Colonel Pearse long ago—I do not know how long ago, but certainly long before the surprises and alarms of the last few days, which have set so many tongues wagging, and have given statesmen, soldiers, sailors, and citizens, of every degree, and of every shade of political belief, so much to think about, and discuss. But the coincidence, the delivery of this lecture dealing with raids (*successful* raids) on our shores, with the news that our naval supremacy is not so assured as we have always fondly believed it to be, lends special interest and emphasis to it; and I hope, therefore, it will be widely read, as soon as it is printed in our JOURNAL, that all men may realise that nothing is impossible in war, that accidents will happen, and that the best laid plans "oft gang a-gley"; and that therefore the most thorough and earnest preparations are necessary to guard against such accidents. Of course, it is common knowledge that raids on our coasts, more or less successful, have often occurred in the past. We have been raided in turn by Normans, and Danes, and French, and Germans; and, humanly speaking, what has been done before, may be done again, or certainly may be attempted again. But, as Colonel Pearse has indicated in his lecture, the next raid that is made will probably be something far more serious than any this country has been exposed to hitherto. These are days of steam and machinery, and of science and perfected strategy; and although the personal factor will always count for something, still, science and steam will probably count for more, and we must always consider that fact. In the successful raids, of which Colonel Pearse has given us such a clear and interesting account, we have seen how the hostile ships and transports have made their way to our shores, and landed their troops, practically without mishap, notwithstanding the fact that our Navy at that period was mistress of the seas, and had ample intelligence and notice of the enemy's plans and intentions. A still more remarkable instance of a great military over-seas expedition avoiding hostile fleets, and successfully attaining its objective, is afforded by the spectacle of the French under Napoleon, in 1798 (the very year of Humbert's successful raid), transporting 40,000 men, with all their stores and equipment, to Alexandria, and landing them there without mishap, notwithstanding that Nelson himself with a powerful fleet was scouring the Mediterranean in the effort to intercept them. It is for you to consider whether in these days of steam and electricity such expeditions and such raids have a better, or a worse chance of success? It is for you to consider what numbers, and what *quality,* of troops would now be employed in such raids? And, finally, it is for you to consider whether the nation has done, or is doing, all that is right, and all that is necessary, to repel any such attempt that may be made? I am afraid the answer to that last query can hardly be in the affirmative. It is written, as you know, "When a strong man armed keepeth his Palace, his goods are in peace." Well, we are strong. Nobody will deny that. But are we armed? Are we prepared, in a great and national sense, to meet every contingency that may arise? Is there not a tendency in the present age, when something has got to be done, to get someone else to do it for you? For instance, we do not play football ourselves, but we go in our thousands to watch others play. And, similarly, when it comes to soldiering, when it is a question of the defence of these shores, which history tells us have never been, and probably never will be, secure against raids, is there not a tendency to let the other man do the fighting, while we do the shouting? I think this lecture must raise in us the doubt that as a great nation we are not doing all that we ought to do in this matter; that we are not grasping the nettle; that we are not fairly facing all the facts. I submit that the essential point to realise is, that each of us has a *personal* responsibility in this great question of home defence, and I hope this excellent lecture by Colonel Pearse will help to point this moral, and will help to educate the nation in the creed that national service, and national military training, are alike the duty and the privilege of every British citizen. It only remains for me, on your behalf, to tender to Colonel Pearse our very hearty thanks for the trouble he has taken to give us a most interesting and instructive afternoon.

Commander W. F. CABORNE, C.B., R.N.R. :—Before we separate, I will ask you to pass a very hearty vote of thanks to General Hutchinson for presiding this afternoon, and also for his valuable remarks. At the same time, perhaps, I may be permitted to say that I am one of those who have consistently held that raids on the United Kingdom are quite possible, and that I never put faith in the statement made by a leading statesman some years ago, that such were practically out of the question. Indeed, they would seem to be more feasible to-day than they were at the end of the 18th century, owing, as General Hutchinson has said, to the existence of enormous vessels, independent of the wind, and capable of being propelled at a high rate of speed. The passage across the North Sea is a short one; the tonnage for the transport of troops, as distinct from munitions of war, need not be so large as is sometimes stated, as the men for such a limited period could be packed like herrings in a cask; and there would not be any great difficulty, in consequence of the frequent haze or mist in the North Sea, in evading cruisers, if the transports sailed independently for some rendezvous.

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from August JOURNAL, p. 1065.

CHAPTER VII.

THE EFFECTS OF THE "GREAT EDICT"—THE SUCCESS OF 15TH MAY—DISARMING OUR SHIPS—BATTLE OF KINTCHAO—LITERAL EXTRACT FROM MY DIARY—"HYDROPHOBIA"—ADMIRAL VITYEFT—SQUABBLES BETWEEN ARMY AND NAVY—REVIVED HOPES OF SAILING—MYSTERIOUS INCIDENT OF 15TH JUNE.

THE organisation of the Japanese intelligence service, especially as regarded spies, was simply ideal. They knew our most secret orders—if possible, before our own ships. Need I say that they knew the contents of the "Great Edict," which had been only carried about in the town and port on the very day of its appearance? Henceforth they no longer dreaded any interference on our part. They disembarked their army with guns, transport, provisions, etc., etc., just as at peace manœuvres. The enemy became careless in a manner which was simply exasperating. From 3rd to 10th May, the Japanese had kept their transports behind their protective booms and a ring of guard-ships. Then they still dreaded possible attacks from us, and dared not begin operations on a large scale. During that time their squadron blockaded Port Arthur during daylight, so as to be able to frustrate at once any offensive attempt on our side. But it remained on the horizon and dared not approach within range of the guns of the coast batteries and of the battleships.

After 10th May the hostile squadron invariably approached quite close, in marked contrast to its former caution. It was as if the enemy knew the order we had received: "Don't fire for fear of provoking a bombardment."

The executive officer of a ship is the senior of her officers. An enormous difference exists between his position and that of the captain, although he is the captain's first assistant. This is the reason why my diary contains not only my personal views and impressions, but the reflex of what went on in the minds of all officers not in independent command. I once wrote in it (I am quoting textually, without any "editing"):—

"It must be confessed that the fleet is a luxury for Russia. Why a fleet if we have no seamen? Possibly there are many who are glad that Makaroff is dead, for now we no longer rush into senseless adventures. We spare ourselves and our ships. But what will be the effect of this? A ship rotting away in port is worse than one which sinks in battle. In the latter case she has at least done something, has had some object." Many others thought like I did.

During this time of general apathy and inactivity (if one does not count the construction of land batteries) the captain of the *Amur* performed a plucky action. This officer had apparently been annoyed at the very free and easy behaviour of the Japanese. Consequently, he was only awaiting a favourable opportunity to run out and sow a few mines, where the enemy generally cruised with so much impunity.

This favourable opportunity presented itself on 14th May. A light fog came on, and the Japanese disappeared from view. The *Amur* went out and also disappeared in the fog. After a little more than two hours she returned, safe and sound. On her return journey to Port Arthur the *Amur* took in very clearly some Japanese wireless messages. However, she saw nothing. It was to be hoped that she also had not been seen. A very important point was the fact that it had not been possible to make sure from the shore where the *Amur* had gone.

I have already mentioned the extraordinary assurance with which the Japanese cruised amongst the mines we had laid out for them. Somehow they never came upon them. They certainly kept in their pay amongst the Chinese inhabitants of Kwantung not only ordinary spies, but experienced pilots, who were able to note all the movements of our ships on a chart. Besides which there was another way. They had only to obtain a copy of our secret instructions. This was perhaps the simpler plan of the two.

We were at breakfast on 15th May, when the officer of the watch sent down to report that the Japanese squadron was in sight. No one paid any attention to this. This was strictly in accordance with our latest orders. Suddenly we heard the sound of people running about on deck, some loud exclamations, and then what sounded like distant shouting, which penetrated to all decks below. "The Japanese are on top of our mines!" shouted the quartermaster at me, instead of making a proper report.

There was great excitement on deck. The men went aloft. Every one tried to get up as high as possible, in hopes of getting a view of something over Golden Hill, Lighthouse Hill, and Tiger Hill. The gunnery lieutenant forgot his rheumatism and went into the foretop. The sub-lieutenants climbed higher still.

Loud cheering was suddenly heard from Golden Hill and the adjoining batteries.

"Another one! Another one! She has sunk!" shouted our people from aloft.

At first we could not believe this. Then semaphores began to work everywhere, and the signal station on Golden Hill hoisted the signal: "A hostile battleship sunk." The fact could no longer be doubted.

"Out! Let us go out and destroy all the rest!" people were shouting everywhere.

I still believe to-day, as I believed then, that we could have destroyed them. But how were we, without steam, to get out into the roads? The brilliant, the only favourable opportunity of the whole war was missed.

The official reports of this scene, described by me with such minute accuracy, say that it was easy for the senseless crowd on board the *Diana* to shout: "Let us destroy the rest!" As a matter of fact, it would have been impossible to do so—they maintained.

Well, let us see.

According to the Japanese reports the battleships *Hatsuse, Yashima,* and *Shikishima,* as well as the light cruisers *Kasagi* and *Tatsuta,* steamed past Port Arthur that day in single line ahead, at a distance of 10 miles. The *Hatsuse* sank fifty seconds after she had struck a mine. The *Yashima* also hit a mine. She was kept afloat with difficulty. (The ship never reached Japan. She sank on the way there.) One battleship and two small cruisers were left. They rendered every assistance to the badly damaged *Yashima*.

At this time we had at our disposal the perfectly intact battleships *Peresviet, Poltava,* and also the *Sebastopol*. The latter had been damaged during the evolutions on 12th March. (She had a crack in her outer skin and one of her propeller blades was bent.) None the less she could have gone out just as well as she did on 18th March and 10th April. Besides, we had our cruisers, viz., the armoured cruiser *Bayan,* the protected cruisers *Askold, Pallada, Diana,* and *Novik,* as well as four gun-boats and two destroyer flotillas.

I maintain that this force of ships could have destroyed the remainder of the Japanese ships, provided they had been ready for sea at 11 a.m. on 15th May, and had gone out at once.

Those in command at Port Arthur had, however, already lost all faith in the possibility of such a success. Perhaps also they were too much penetrated with the idea, which had been industriously circulated, that we were unable to make a move of any kind until the, as yet highly problematical, reinforcements from Russia had arrived out. At any rate the squadron was not ready for sea, nor was the order given to raise steam at the moment of this occurrence. And yet one battleship (*Peresviet*) and all the cruisers had water-tube boilers; they might have been ready in half an hour.

Only just before 1 p.m. the destroyers were sent out. They were to harass the enemy, and if possible to attack him. At the same time the cruisers were ordered to raise steam. It was too late. The enemy's armoured cruisers had already arrived for the protection of the damaged battleships. They chased away our destroyers with ease, and when we were ready to go out, all that was left of the Japanese were some small puffs of smoke on the horizon.

This failure to act was worse in its effects than actual losses.

"We can never do anything. Where is this to end?" was the cry of the more excitable amongst us. "It was decreed by Providence," replied the philosophically minded ones. But all were now of a sudden agreed that we had nothing further to hope for from the future. There remained nothing more for us to do but to bow to the truth of the "Great Edict." Never have I seen spirits fall so rapidly. By and by, it is true, they went up again, but only because every one had resolved to fight to the finish as in duty bound, in any case and under any circumstances.

It was precisely on this day that the Japanese army of invasion finally cut off Port Arthur. What would have been its fate if we had, I don't say destroyed, but merely scattered the hostile squadron, in its then state of confusion and discouragement? We could have sunk the fleet of transports and, under the protection of our guns, destroyed the provisions which had been stored up at Pitsevo.

It is awful to think of all this now!

On 16th May we had rumours of some insignificant fighting north of Kintchao. Our side had merely delayed the enemy, and then retired to their "impregnable" position on the narrow neck of land.

On 17th May the signal to raise steam was made twice, and twice we had to put out fires again. Eventually only the *Novik* and the destroyers went out. They returned very soon. What they did I could not find out.

The success of 15th May, of course, produced a lively interest in mines. Talienwan Bay had already been completely blocked with mines at the commencement of the war. On 18th May the *Amur* was sent out to place mines also between Talienwan and Port Arthur, opposite the small bay called the "Kurort," near Dalny. The *Novik* and the destroyers were sent out to protect the *Amur*. When the "Greyhounds" appeared, the *Askold* went out in support. The ships indulged in a long range action, without, however, producing any effect. Of course, this particular enterprise could not possibly have any results later on; the Japanese had seen everything.

About the middle of May we started sweeping for the mines laid out by the Japanese in the outer roads with redoubled energy. On their side the Japanese worked with all their might to lay out double as many mines as we had fished out.

For instance, during the night of 20th May, three small steamers appeared in the roads and busied themselves there. They were lit up by the searchlights from the forts and fired at by the batteries and the guard-boats at the entrance for about half an hour. Our people maintained that one steamer had been blown up. When next morning our boats set out to sweep for mines, they found forty peculiar wooden frames floating about on the water.[1] This number, of course, corresponded with the number of mines thrown out by the steamers. But we only found five mines—not a very comforting result.

In view of the enemy's great boldness, orders were issued for the guard-boats hitherto stationed in the mouth of the harbour to be replaced by a cruiser.[2] We were the first to be employed thus. On the evening of 21st May we secured the ship to the buoys in the entrance itself, near the shores of Tiger's Tail Peninsula.

From our inactivity at the time of the catastrophe of 15th May, and during the succeeding days, the Japanese had evidently drawn the conclusion that we were quite harmless. For nearly a week they, at any rate, never came in sight.

Meanwhile, the effects of the "Great Edict" began to spread to such ships as were perfectly ready for sea and for action. From the *Diana* a searchlight was removed and put up at our position at Kintchao. With the searchlight we had to detach to the shore a sub-lieutenant, two leading torpedo-men, two torpedo-men, and two stokers.

On 24th May the *Diana's* ward room was in a state bordering on open mutiny. The officers were swearing in their choicest terms.

The younger members were the most violent: "We won't allow it; we'll stop it by force; we'll never agree to such a thing," was heard on all sides.

The following was the cause. Naturally, the assurance that the guns which had been removed from the battleships under repair to the forts were only lent for a short time was merely to sugar the bitter pill. That was only to be expected. These guns remained away permanently, as the Defence Scheme of Port Arthur only existed on paper. The constructors promised to complete the *Retvisan's* repairs by 2nd June. Now the rumour was being circulated that the secondary and light Q.F. armament which the *Retvisan* had supplied to the forts was to be replaced by those of the *Diana* or *Pallada*—the ship thus disarmed being laid up.

---

[1] A species of sledge on which the Japanese launched their mines overboard.

[2] To place a cruiser as guard-ship in the roads, as in Makaroff's time, was not risked. But then the Viceroy had himself abolished the arrangement.

On 21st May we received a new captain.[1] Our old one got a better command. He went to the *Tsesarevitch* (this battleship was completed soon after the *Retvisan*). I thought it my duty to inform the new captain what the general feeling was on board; I did not conceal from him the fact that I shared the views of my messmates, although, of course, I would carry out any order received from my superiors. My satisfaction was great indeed when I found the captain was in no way astonished at my report; he quietly stroked his pointed beard, and said: "Why all this excitement? I should like to see them start on this disarming of the *Diana*. Just let them come along." This was said with so much assurance that I went into the mess and said: "Gentlemen, it is all nonsense; we are not going to be disarmed."

They all believed me, and peace reigned once more.

On 25th May the Japanese began their attack on Kintchao, the key to the Kwantung peninsula. On that day we from the early morning had constant requests for men to transport guns and war material by rail to these positions; more and more men were thus employed. Out of our (reduced) complement of 456 men we eventually had 283 on shore. They only returned after midnight. Towards 9 p.m. on 25th May a thunderstorm made its appearance; it was still far off, and we mistook the thunder for the firing of distant guns. By midnight it had reached us; it was accompanied by an almost tropical downpour.

On the morning of 26th May we heard that this thunderstorm had done great damage at our land front; the greater part of the shell which had been stacked in readiness had exploded or become useless. Lightning conductors were now to be erected: this had not been thought of before. At daybreak signal was made to the *Poltava, Peresviet,* and all cruisers, the *Amur* and the destroyers to get up steam. Presumably we were to go out in support of our troops who were defending the neck of land; at least that is how we understood this order. The evening before (25th May) the gun-boats had received orders to go to Talienwan: however, only one of these, the *Bobr,* had sailed. The remainder, no doubt in accordance with the spirit of the "Great Edict," were calmly making good defects in engines and boilers, and were therefore not ready for sea; their captains were superseded. It was too late; this unjust severity could not put things right.

The *Bobr* got out safely through the mines and appeared on the morning of the 26th in the north-east portion of Talienwan Bay. From there she fired at the Japanese, who were attacking our right flank. The enemy was repulsed with heavy losses. At 11 a.m. the signal station on Golden Hill made the general semaphore—"The fleet is informed that the enemy's attack has been repulsed. The *Bobr* fought brilliantly."

---

[1] Prince Lieven.

To many it appeared strange that the *Bobr* returned to Port Arthur the same day having (of course by "superior orders") left the position where she had been of such service. We received her with cheers, but involuntarily we felt bitter doubts.

Why was the *Bobr* withdrawn? Why, on the contrary, were the *Gremyashtchy, Otvajny* and *Gilyak* not sent out to support her? These vessels had got their engines into working order again and were ready for sea. Why was the sailing of the cruisers and destroyers which already had steam up countermanded? From information which reached the squadron a fierce battle was raging at Kintchao. Our army was fighting brilliantly; on the other hand, eye-witnesses told of much that was praiseworthy on the Japanese side. The prowess of our adversaries was universally admitted.

Later on I received some details from a military officer, who had been decorated with the Cross of St. George[1] for an act of bravery witnessed by hundreds. "Do you know," he said, "there was a moment when I was thoroughly frightened. The enemy came on like a savage horde. I was posted with my battery behind the left flank, with orders to prevent it being turned at low water. The battle begins: we can't join in, but get hit and suffer losses, very considerable ones, in fact. An ugly situation—but never mind, we keep still, but boiling with rage. Just you wait, we think; when our turn comes we'll give it these fellows; we are in splendid spirits. At last we get our chance: the tide had fallen and the enemy is trying to turn our flank. What their strength was at the beginning I can't say. Probably they had already suffered losses on our front. What we had before our guns appeared to be a battalion, but they had colours, and had therefore once been a regiment. The enemy wheels towards the beach and straight at us: the men only advance with difficulty, wading in water up to the chest. The bottom is slippery clay; we open fire: nearly every shot is a hit; whoever is hit in the leg falls and is drowned, none of them rise again. They become fewer and fewer, but on they come. The colours move about, they pass from one hand to the other: Still they are advancing. 'Load with shrapnel!' I shout. 'Faster! Faster!' I no longer know what I order. Then I myself worked a gun—our losses were heavy. The wounded drag themselves along and help to pass shell; even the dead horses seem to come to life again. Only with the last man did the colours sink into the water; only then did I realise what we had felt at the thought—'The enemy will be on top of us at once.' When everything was over and we only had the smooth surface of the sea before us, there were many volunteers to look for the colours. We thought that the flag might float up: it did not. The last bearer did not let go his grasp. The flag lies buried with him in the deep mud. We could not find a trace of it. Soon after the enemy's gun-boats arrived and commenced to fire at our left flank. They worked well; our traverses, which had been strengthened, were simply blown away by them."

---

[1] In Russia the Commander-in-Chief has power to confer decorations on the spot.

As is known, General Fock gave orders during the night to evacuate the position. The evacuation had not been prepared for. We had intended to maintain ourselves on the isthmus several weeks longer. The result was utter confusion; the same troops which had only just repulsed the attack of the enemy's best forces like heroes, retired in complete disorder as after a defeat.

"If we retire, we are being pursued; if we are being pursued, the enemy is at our heels"—thus argued the rank and file. The result was that we fired on our own supply columns. Once it was still worse: two regiments skirmished against one another and nearly had a battle by themselves.

The same night the first destroyer flotilla was got ready in a great hurry and sent out into Society Bay (Society Bay lies to the west of the isthmus of Kintchao). They were to attack the Japanese gun-boats, which had fired at our left flank and thus supported the attack of the right wing of the Japanese army.

This expedition of our destroyers ended disastrously. The gun-boats were, naturally, not found (as a matter of course they had gone to sea for the night). When the *Vnushitelny* was looking for them amongst the islands she grounded on a rocky patch. She had to be blown up so as not to fall into the hands of the enemy.

All these days passed like a fever. Our painful uncertainty was only intensified by the wildest rumours, which told now of victories, now of defeats.

I have promised my readers to do my best to reproduce all our impressions and feeling during these awful days with photographic accuracy. But how difficult this is! We had lots of work, and work which was both heavy and hateful. We had to surrender our guns and mount them in the battery on the land front. For these days my diary only contains single short sentences (sometimes several entries in the twenty-four hours). Between the lines of these one can read my bitter indignation. I nearly went so far as to curse everything. I will reproduce them without comment.

"*May 29.*—I feel wretched: I don't feel inclined to write any more. We are giving up the fleet. The squadron and the fortress, lost beyond hope, are to be saved, and for this purpose we are disarming the ships. How senseless! It is flying in the face of all reason. Yes, with a ship her whole crew goes down; on shore not so—that is where the shoe pinches. Kuropatkin is to drive the Japanese into the water: that sounds fine, but what do the results of Turentchen and Kintchao promise? We ought to go out and fight, not sit here in idleness. A battle is said to be impossible because the forces are unequal: are they so in reality? And if they were? Then we must force our way through to Vladivostok. They say this would be like flight; that we must not desert our comrades here. All very fine—what heroes we are! not in the least conceited! Kutusoff sacrificed Moscow, and thus saved the army and Russia; we are sacrificing the squadron, go on shore and try to save Port Arthur. It looks like self-sacrifice on our part. In reality we thus have greater chances of saving our lives: one can't be drowned on shore. Then *Diana* surrenders two 6-inch and four 12-pounder Q.F. guns, but that is nothing, much worse is in store.

"11.30 p.m.—The moon is shining; out in the roads a Japanese destroyer flotilla is passing from east to west. Probably they are laying out mines. 11.52.—*Gilyak* and the other vessels in the entrance open fire. The distance is from 40 to 50 cables (8,000 to 10,000 yards). The batteries are also firing. 12.8.—The Japanese have gone. Probably they have completed their task. They came notwithstanding the moonlight night, just as if to mock at us; we never tried to chase them, we are suffering from hydrophobia.

"*June 2*.—The cruisers and destroyers are being prepared for an expedition. It came on foggy, and only the destroyers sailed for the Gulf of Petchili. It is quite incomprehensible. In a fog we can't go out—one can't see anything; in clear weather we also can't go out—the enemy would see us before we saw him. Our nerves are so unstrung that we see a bad omen in everything. To-day, for instance, towards 11 p.m., a regular tropical thunderstorm, combined with a curious phenomenon. The clouds were mostly high up, but a single white cloud which looked as if it possessed its own means of illumination was lying quite low over Golden Hill. It covered the hill half-way down, and its white colour contrasted sharply with the dark background. During the flashes of lightning it turned purple. Does this forbode anything? How stupid!

"*June 3*.—Our destroyers returned at 8 a.m. in safety. They saw nothing and did nothing, but at least they are unhurt, and we must be thankful for that much; besides, it is a good omen; they have at least risked something."

These were weary times also as regards physical labour, especially for us cruisers. When we were on guard at night in the entrance, we always had to exchange shots with the Japanese who were bent on laying out mines in the roads. Our men were then only allowed to sleep fully dressed, half the guns' crews at the guns, the other half somewhere near. Moreover, we worked night and day in the land batteries. Of our four divisions[1] we always had one at that work, one on watch, a third just off watch and getting ready for work, the fourth just relieved from work and resting in readiness for the next watch; added to that was the coaling and the boatwork in sweeping for mines. There were days when the men dropped from sheer fatigue or went to sleep all standing.

---

[1] The crew of a ship is divided into two watches, and each watch into two divisions (called "parts" in the British Navy).

Yes, it was said; and all because we had lost our "head," as the men said.

That Admiral Vityeft had got the command of the squadron was pure chance. It was only in consequence of Admiral Alexeieff having fled and Admiral Skridloff not having arrived. That Vityeft was personally brave admits of no doubt; he has proved it. For the rest, he had the reputation of being a scrupulously honest man and a diligent worker, but he had served almost the whole of his time on shore. A seaman he was not; he confessed it quite openly. When Vityeft assumed command of the squadron, he said at the first meeting of flag-officers and captains: "Gentlemen, I expect you to assist me with words and deeds; I am no leader of a fleet." Vityeft said this quite honestly and openly. In my opinion he had better have held his tongue.

In war there can only be *one* leader; this is the fundamental condition of any success. An army without a leader *may* perish in consequence, a leaderless fleet *must* perish. The laws of war are based on the teachings of history. It is not for nothing that they lay such stress on the powers of a single leader. For the one supreme leader even a council of war, which he may call together at critical moments, is only advisory. According to our laws the Commander-in-Chief may join his vote to that of the minority in the council of war, or even to a single vote, which he may consider the best, and thus make it decisive. The decision thus arrived at cannot be questioned.

At the famous council of war at Filach (1812) the majority recoiled at the thought of giving up the capital without fighting; what may have passed in Kutusoff's mind? Was he firmly convinced of the infallibility of his personal opinion? Who can tell? But he certainly did not renounce his right as leader of finally deciding, and said: "We will sacrifice Moscow, so as to save the army, to save Russia," and all obeyed.

By his declaration Vityeft renounced his unlimited powers as dictator and left it to the majority. What does majority mean? It seems to me that in every council of war there will always be one man whose courage and determination make him conspicuous (for both these attributes are rare). Then there are a few who approach him. Amongst the remainder there will be a certain number of pusillanimous souls. That is why our law governing councils of war says that the leader is to support the most courageous opinion, without reference to the number of votes recorded for it.

With us things were different.

On thinking these events over again, which already belong to history, I cannot say that to-day I would write down in my diary the harsh words cited above. There were extenuating circumstances; there was a factor which weighed heavily on the council of war of our admirals and captains. In 1812 the generals did not want to abandon Moscow, so as to become a prey to the enemy, as they dreaded the reproaches of all Russia. True, Port Arthur was not Moscow, but our admirals did not want to desert it at a critical moment, as they dreaded the reproaches of their comrades in the army. This reproach was already in the air; anonymous writings already began to reach the ships. I will mention one of these: it was a parody on the well-known tale of "Grandfather Masai and the Hares." In this parody the relations between fleet and army was described very transparently. Unfortunately I no longer possess the text, I lost it in the battle; I can only give the contents from memory. "In a big courtyard there lived some white rabbits, and grey-haired dogs watched over them.[1] Once there was great danger; the wolves were coming. The dogs prepared for defence, but the rabbits said: 'Don't alarm yourselves, we know a dodge to keep out the wolves.' But when the fight began and the dogs were worsted, the rabbits got nervous, and one fine day they decamped to the north (read 'Vladivostok') under the leadership of the 'oldest and biggest coward.' They left nothing behind but a mighty stink, which took away the breath of the poor dogs. The dogs were fighting for their lives with the wolves, when Grandfather Masai (read 'Kuropatkin') came to their assistance and drove off the enemy. When he had done this he called back the rabbits and asked them: 'Why did you desert your faithful friends and make off?' The rabbits replied: 'Forgive us, Grandfather, we merely took our furs to a place of safety; our furs are surely more valuable than the skin of a mere dog.'

"Then spoke Grandfather Masai, and said: 'You have soiled your furs and they are no longer worth anything'; and he took up his stick and chastised them."

This lampoon was produced on a typewriter; it was sent by post to all admirals, captains, and executive officers, and officers' messes—that is, a considerable number of copies appeared at the same time. It was clear that some one took a great interest in spreading it.

The relations between army and navy (at Port Arthur) had never been particularly friendly; with the outbreak of war they became very bad.

I believe I am already able to consider the past with comparative calm and impartiality; but I cannot rid myself of the idea that some one had his hand in this from personal interests. Some one suggested to the army that our failures at sea were not the fault of the commanders in the fleet, but of the bad elements under their orders (officers and men). The same thing was whispered to the navy about the army.

---

[1] Naval officers possess white tunics, whilst military officers have grey overcoats.

The army violently accused the squadron of having been caught unprepared by the enemy's attack. The navy, on the other hand, maintained that the fortress had been taken by surprise by the war. On 9th February, only two hastily prepared batteries had been able to support the squadron. The remainder had not been manned, and the guns were still swaddled up for the winter.

It was the case of the kettle and the pot: still, some one had an interest in furthering this squabble. How otherwise can the following be explained?

In the officers' messes on board the ships whose guns had been landed to strengthen the land front scenes were enacted which were not far removed from mutiny. It went so far that some officers threatened to get up steam, go to sea, and if the fortress tried to prevent them, to fire at the forts. At the same time the people in the forts abused the navy for not wanting to fight and for landing their guns. The irritation against us became so great, that in all seriousness the proposal was made for the fortress artillery to fire on the squadron to force it to put to sea and fight.

A singular misunderstanding. Was it not purposely disseminated amongst the two most important defenders of the Russian cause, of Russian honour in the Far East?

Later on this misunderstanding was cleared up. The instinct of the masses realised that they were not enemies. But did this do any good? Did the army and navy henceforth look upon the Japanese as their common enemy? No; they looked upon their superiors as the common enemy.

However, I must not anticipate; I propose to describe the successive feelings in the beleaguered fortress, as noted in my diary in the same chronological order as the events.

For what are we to blame the late Admiral Vityeft? Was it his fault that he was not born a Kutusoff? Is he guilty, because at the council of war he did not join the two votes who demanded that we should go to sea and plunge into the deadly battle without fear of the reproach of having deserted our comrades of the army? History will decide.

One must be just to Vityeft; he was consistent. In the council of war of the senior commanders he joined the majority. He was equally ready later on to listen to the voices of the other majority—the entire *personnel* of the squadron. This majority was young, perhaps also inexperienced and silly, but it was full of enthusiasm. It was indignant at the part which it had been forced to play, and often nearly mutinied.

Of course I cannot say whether it was due to orders from above or to the pressure of public opinion in the squadron—anyhow, the news soon spread in the ships that the old orders were cancelled and that we were to go to sea as soon as the battleships were repaired. It was received with enthusiasm.

We (*Diana*) had surrendered all our 3-pounder Q.F. guns and rifle calibre machine guns, in addition to the previously mentioned guns and searchlights. The other ships had landed as much or even more, for, generally speaking, nearly the whole of the light Q.F. armament (including the 6-pounders which we did not carry) had been disembarked. In the general rejoicing no one bothered about them.

"God be with our guns! let us hope they will be of some use. We shall do very well with what we have left," was said in our mess.

The outer anchorage was now diligently swept for mines so as to clear a channel through the hostile minefield out to sea. Many people now came forward who combined the spirit of enterprise with a genius for inventions. Beside the yard craft, the steam-hoppers attached to the dredgers were fitted up as mine-sweepers. These craft were really intended to take the mud, which was dredged up, out to sea. They were clumsy, but strong, and drew but little water, and therefore highly suitable for this new service. They answered their helm even in a seaway or in a swell, and towed hundreds of fathoms of sweeps along. The destroyers also had to learn the art of mine-sweeping. They took the place of the other mine-sweepers outside the range of the coast batteries, and cleared the channel where these hoppers could not be employed.

The Japanese, of course, noticed our renewed activity. They came nearly every night and dropped new mines in the place of those we had fished up. As soon as the moon had gone down or was hidden by clouds they appeared here and there, and the firing from the batteries and guard vessels began. It was a pity that no cruiser was kept out in the roads as guard-ship; that would have been a much more serious threat for the enemy. Port Arthur was cut off, but Alexeieff had abolished Makaroff's measures. That was why no one dared to reintroduce them. The Viceroy was a long way off, but to do anything against his orders seemed highly dangerous. War or no war—what would he think of it?

Henceforth a subdivision of destroyers was sent out on guard. That was always something.

During the night of 6th-7th June our searchlights discovered three small steamers in the roads. Doubtless they were mine-layers; one of them was sunk. The battery on Cross Hill and the destroyers on guard disputed the honour of having destroyed her.

On 9th June, Japanese warships appeared again off Port Arthur after a long pause.

On 11th June, it was foggy; under cover of the fog some destroyers were sent out that morning: six to Pigeon Bay, three to Tache Bay (to the eastward), two others were on guard in the roads. All returned safe and sound the following morning; but they had seen nothing and done nothing.

Work on the damaged battleships was progressing apace; on the other hand, the party which was opposed to going to sea displayed increased zeal. Thus a very positive report was spread on 13th June that the *Pobieda* was only to get back half the 6-inch guns she had landed, also that it was proposed to sacrifice a cruiser—probably *Diana* or *Pallada*—to complete her armament. Need I say what impression this news created on board us? Actually on the eve of battle we were to be disarmed! Happily, things turned out differently.

At this time our troops had already retired up to the Green Mountains. Dalny was in the hands of the enemy. From Chinese sources we heard that they were busily employed in clearing Talienwan Bay of our mines, and in putting to rights the docks, workshops, quays, etc. I forgot to mention that we had been firmly convinced that our position on the Isthmus of Kintchao was impregnable. Consequently, until this position was captured by the enemy we had not taken any measures at Dalny for transferring to Port Arthur the immense quantities of stores at that commercial port and its *depôt* of railway plant. The powerful dynamos, the plant of the workshops and the stores of all kinds in Dalny were treasures for the besieged fortress and the squadron blocked up there. Even after 27th May there was a week of hesitation. Apparently it was the intention to fortify the heights near Nangalin and to delay the enemy here for a considerable time. When this plan was definitely abandoned and our troops began to retire on the Green Mountains, orders were given to remove as much as possible from Dalny and to destroy the rest. A portion was got away, everything else was burnt, blown up, thrown into the sea, or rendered useless in some other way; but owing to the great hurry we were in, this was not done thoroughly enough. The Japanese were soon able, without special exertions, to get everything at the port into working order again.[1]

On 14th June the enemy attacked the Green Mountains with determination. A flanking column was sent along the beach (in the neighbourhood of Sikou Bay), covered by the fire of thirteen destroyers. From Port Arthur the *Novik* and a destroyer flotilla were sent out. The parts were reversed and the Japanese had to retire.

On 15th June the Japanese again came in sight. This time it was not single ships, but a squadron consisting of two battleships, two protected cruisers, and twelve destroyers. We expected the entire Japanese Fleet.

"No wonder," some said; "the Japanese are, after all, no children. They make their dispositions in time. We inform the world how the work is progressing on board our damaged battleships, that the port is not blocked up, and that we mean to attack the Japanese soon. With all that we are still sitting here and dare not show our nose outside! I suppose we are waiting for the Japanese Fleet to assemble here!"

---

[1] We heard later that the cruiser *Tchiyoda*, which had struck a mine in July, was repaired in the dock at Dalny with the assistance of the local workshops.

On the evening of 15th June a mysterious event happened which was never cleared up. (The Japanese know how to keep their losses dark.) The day had been very hot (77° F. in the shade). In the evening I was on the upper bridge with the gunnery lieutenant; we were enjoying a breath of the cool night air, and at the same time peering attentively into the darkness in which the fortress searchlights were moving backwards and forwards. *Diana* was guard-ship in the entrance; signalmen and specially picked lookout men were stationed everywhere on the bridges, on the upper deck, and at the gangways close to the water.[2] The sky was overcast, and neither moon nor stars were visible. It was absolutely calm, there was no swell, and there was no sound of the sea breaking on the beach or over the banks near it.

Suddenly—or were we mistaken?—there was a flash far away to the south. No, there was no mistake, we heard the muffled sound of a very distant explosion. In an instant all searchlights were trained in that direction. Their white beams were eagerly searching about in the dark like giant antennæ of some fabulous monster. There, in the same direction, we saw the characteristic greenish-golden flashes. We heard the brisk but intermittent fire of guns. This lasted perhaps ten to fifteen minutes; then everything was still and dark. I looked at my watch: it was 10.50 p.m. I need not say that at the first sound the crew of the *Diana* rushed to their general quarter-stations; every one with bated breath followed this unexpected night action.

"Surely there can't be any of us out there?" asked the gunnery lieutenant.

"No," I replied decidedly. "We are the guard-ship, and nothing could get out without our knowledge. They are certainly not ships belonging to our side."

"Then the Japanese are fighting each other."

We estimated the distance to be about 10 miles. It was just where the Japanese generally cruised about. But what had happened? There were only two possible answers to the question, and equally likely. Either a Japanese had struck one of our mines and had fired aimlessly into the water, or a Japanese destroyer had attacked a ship of its own side in error: both were equally agreeable to us.

On the following day, 16th June, nothing was to be seen of the Japanese; the *Amur* seized the opportunity and went to lay out mines to the westward of Kwantung. On her way back she struck something, and tore open her side; the damage was not serious. Some thought it was a good sign; they maintained that if the *Amur* had sprung a leak in deep water something must have been lying there; as no rock could have got there suddenly it must be a Japanese wreck.[1]

---

[2] At night one often sees better when placed low down close to the surface of the water than when high up.

On 17th June the destroyer *Lieutenant Burakoff* returned safely. She had been sent to Inkau: she narrowly escaped falling into the hands of the Japanese cruisers. Thanks to the haziness of the weather, and especially to her speed, she got through.

What bitter irony! Our best, that is, our most reliable and speedy destroyer, was the *Lieutenant Burakoff*. This vessel we had taken from the Chinese[2] at the capture of Taku, and the Chinese had had her built in Germany ten years previously; she was the only one of the whole flotilla which was suitable for a task such as running a blockade.

During this time our troops were gradually falling back on Port Arthur. At several points they had delayed the enemy's advance for a short time.

On 18th June the *Otvajny, Gremyashtchi, Novik,* and four destroyers went out. They were to prevent an attack on our left flank by their fire.

---

[1] Later we realised that these rumours were only circulated to quiet the minds of our people. In reality the *Amur* had struck the wreck of the *Shilka,* which had been sunk by us; it was her own fault.

[2] That is, the British destroyers, under Captain Keyes, had captured her and handed her over to the Russians.

(*To be continued.*)

LESSONS OF THE RUSSO-JAPANESE WAR APPLIED TO THE TRAINING OF INFANTRY.

Condensed and Translated from the Japanese.

Contributed by the General Staff.

PREFACE.

THE author of this work states that, before the war, his duties lay with the training of Reserves; he apologises for any repetitions or crudity of style in his work, on the plea that, "being on active service while writing it, he had very little opportunity for revision." He also gives a list of the recently published works which he consulted before finally putting his MS. into the hands of the publishers—at Nagoya in 1906.

CONTENTS.

CHAPTER I.—OBJECT OF MILITARY TRAINING.

Section A.—Character of Military Training.
Section B.—Details of Military Training.
Section C.—Physical Military Training.
Section D.—The Real (Trained) Soldier.
Section E.—Duties of a Japanese subject.
Section F.—Main divisions into which military training may be divided.

CHAPTER II.—MILITARY EDUCATION.

Section A.—Summary.
Section B.—Keeping up training.
  B¹.—Object of training.
  B².—Physical training.
  B³.—Sanitary.
  B⁴.—Exercises.
Section C.—System of military education.
  C¹.—Objects of this education.
  C².—Developing the intelligence.
  C³.—Order of teaching.
  C⁴.—General Scheme of teaching.
  C⁵.—Models, to live up to in teaching.
  C⁶.—Unenlightened teaching.

D¹.—Object of training.
D².—Making training comprehensive.
D³.—Will training.
D⁴.—Active training.
D⁵.—Higher training.
D⁶.—Encouragement of training.
D⁷.—Making training suitable to individual soldiers.

CHAPTER III.—GENERAL PRACTICES.

Section A.—General summary.
Section B.—Education of soldiers with the colours.
  B¹.—Gist of this education.
  B².—Gist of their education while recruits. (*See* Table of Education of Recruits for 1902.)
Section C.—Education of Reserves.
  C¹.—General scheme.
  C².—Proposed scheme for future work.
Section D.—Education of non-commissioned officers.
  D¹.—Gist of general plan.
  D².—Lessons from war—unfinished.
  D³.—Practical work—unfinished.
Section E.—Special education.
  E¹.—Special education of officer candidates (Shikwan Kohosei).[1]
  E².—Special education of one-year volunteers (Shigwanhei).[2]
  E³.—Special education of six weeks' soldiers (1st Reserve).
  E⁴.—Combined training.

CHAPTER IV.—FINAL DEDUCTIONS.

CHAPTER I.

The principles which must chiefly be taken into account in the training of infantry are as follows:—

1. The object of an army is to fight, and all training must lead to the betterment and improvement of the fighting machine.

2. The first duty of a soldier is to obey absolutely the commands of his superiors, so that a whole military unit may act as one man.

2a. To keep up the military spirit.

2b. Handling of arms.

---

[1] Men from the military schools or middle schools, who have graduated (having put down their names as candidates for commissions) have to go through a course in the ranks.

[2] Men who pay all their own expenses for uniforms, etc. They have special privileges, and serve only a year.

The soldier must be taught that to fulfil his duty properly he must not alone do it mechanically, but must become imbued with the military spirit.

3. It must be borne in mind that the *personnel* of an army can only be maintained by individual members of it keeping up their physique.

3*b*. The education of our army is designed to develop not alone the man's character and martial spirit, but also to develop the man physically. (*See* Section *d*.)

Military training is designed to inculcate into the soldier certain qualities which are wanting in men who have not served. The spirit of discipline must be inherent, and both the military spirit and the physique of the soldier should be developed as much as is humanely possible.

If this system of education is not carried out in a national army, even though the men have only to serve 3 years, their characters may deteriorate, and great harm will be done to the nation.

Para. b.—The spirit of the soldier must be unswervingly loyal, and must be marked as much by its courtesy as by its fearlessness. The soldier must be a faithful friend to his comrades, and he must be hardy.

b^2. *Honour.*—Soldiers must above all things have *moral;* this alone can keep up the military spirit, and keep men cool and fearless in the face of the enemy.

Discipline.—Discipline is the foundation of a good army. Under no circumstances should a soldier question an order given him by a superior, and unswerving obedience should become a second nature with him.

d. Self Control.—To be calm under the stress of privations and hardships is an essential part of the training of every soldier.

e. Devotion to Duty.—Every soldier must perform his duty, no matter what sacrifice he may have to make. It must be looked upon by him as an honour as well as a duty to be permitted to sacrifice his life at the altar of patriotism.

Para. c. Details of Military Training.—Training for war is the object which must always be kept in view. Every soldier should study the lie of the country, both by day and by night. Night operations should frequently be carried out in times of peace, so that plans may be formed to deal with every possible emergency that may arise in war time.

c^2. The *character* training of the recruit must receive special attention, as otherwise his mind will be disturbed by the dangers and horrors of actual war.

c^3. *Handling of Arms.*—Soldiers must be taught this duty very carefully, and individual attention should be given to them.

c^4. *Shooting.*—Soldiers must be taught that the rifle is their most important weapon.

c^5. *Judging Distance* is also most important. Unless the soldier is thoroughly practised in judging distance he will be unable to select the object at which to aim or to adjust his sights properly when in extended order. Every soldier must be able to judge distance accurately up to 600 yards, and roughly up to 1,000 yards.

c^6 *Field Entrenchments.*

c^7 *Bayonet Work (Kenjitsu).*

c^8 *Skirmishing.*—Soldiers must be taught *always to advance* to replace casualties as they occur automatically from the second and third lines, and to concentrate their fire before charging.

Section d.—Physique.—It must always be borne in mind that a battle is ordinarily preceded by a long march, generally made over bad roads. Therefore, the ability to march long distances in full marching order without becoming fatigued is almost the most important duty of a soldier. Marching is greatly affected by conditions of weather—a fact which must be remembered during peace training.

b. Camping.—After a battle, outposts must be thrown out from the reserves, and after a march, from the leading companies. This must be done at once, even without special orders.

In choosing the site for a camp or bivouac in the vicinity of the enemy, tactical advantages are paramount; but camping under insanitary conditions may prove as harmful to an army as would be a lost battle.

Section e.—The Trained Soldier.—The soldier, when fully trained, ought to be inured to all hardships. He may have to fight after marching long distances without food. He should therefore be trained to bear himself with equanimity and to exercise self-control under all kinds of weather or under any conditions of discomfort. By such training he will not lose *moral* when faced with the realities of war.

Section f contains quotations from the Imperial Ordinances.

Section g.—The main parts into which military education may be divided are two:—

1. Training.
2. Keeping up training.

In both of these it must not be forgotten that the character training is most important, and that the character or *moral* of the recruit must in no case be neglected.

PART II.

Principles of Training.—The object of all military training is to make officers and soldiers fit for war. Every manœuvre carried out should be made as realistic as possible; strict discipline must be maintained, and the necessity of developing the soldier's character must never be forgotten.

In manœuvres, however, nothing should take place which might depress the soldier, and no unnecessary hardships should be incurred except with a special object. The military spirit must be maintained by every possible means. If this practice be neglected in peace, the army will suffer for it in war.

Part II. (b).

The principle to be observed in the training of recruits is, that they must learn to walk before they can run. The army may be likened to a great machine, every small portion of which must be perfected in order to make the whole work smoothly. The instructors must practise very great patience, especially in cases of individual instruction, so that men may not become disheartened.

Gymnasium.—Recruits must do exercises varying with their personal strength. If men's strength be overtaxed, more harm than good will be done.

Shooting is valueless unless practised continually. For the first year's service, Morris tubes should be used.

Kenjitsu (bayonet and fencing) is of no use except as a physical exercise, unless men are taught to use their brains, and do it intelligently.

Good Moral is by far the most important adjunct of a soldier, as it inculcates the spirit of duty, and teaches a man to have no fear of death. In military training, the greatest stress must be laid on fostering the spirit of self-reliance, and if only this can be produced, good *moral* and self-reliance can best be impressed upon men during manœuvres, or at any operations where several corps are competing.

Fencing, bayonet work, and gymnastics make a man self-reliant, and active. They also make a man persevering, and prevent him from losing heart, even if defeated at first.

Part II. (d).

The main principle of enforcing a strict discipline is to engender a sense of respect among troops for their superiors; these latter must, therefore, be always just, and conscientiously carry out all duties.

Individual training is the best time during which to inculcate and foster this spirit of discipline. Recruits must feel that they are always under the eyes of their superiors, and they must be taught to look upon their officers as gods, who will reward or punish them according to their deserts. It will, therefore, be seen how important it is that officers should never overlook any fault or slackness. Men must look upon the commanding officer of their unit as the fount and origin of all discipline, and they must feel that their lives are at his disposal.

This, then, is the meaning of discipline, and thus can the trained soldier be evolved. If an officer overlooks faults he will lose the respect of his men, and will never raise his unit to the highest point of discipline.

Uniform.—By means of their uniform, soldiers can always be watched, and the wearing of uniform is a great factor in the creation and maintenance of discipline. There is no better test of the discipline and state of a corps than by seeing the way in which the men are dressed when away from their officers—whether smartly or otherwise.

Discipline is best inculcated in the barrack-rooms; hence the enormous importance of the "superior soldiers" (*jo-to-hei*). It must become the second nature of the soldier. The results will be seen in the skirmishing line, which is the supreme test of the young soldier.

A system of excusing more skilful soldiers from attendance at drills as a reward for their progress is much prized.

The species of drill must be frequently changed, or men will grow tired of it.

Section III. (c).

The training of the recruit in the first few months after enlistment becomes the standard of the whole military training of the soldier.

The various text-books all expound the principle of the extreme necessity for exercising the greatest care in the early training of the recruit, and it is an established fact that it is practically impossible to expunge, in later service, bad habits gained during the recruit period. This principle is applicable equally to the training of the mind as to that of the body. During his early service the character of the recruit must be formed, and he must be given a fair start in his military career.

A soldier who is disposed to argue or to question orders must be dealt with most severely. It is necessary that officers and instructors should know from what kind of home and surroundings the recruit is drawn. The instructors of recruits form the most important factor in military life.

The company is the unit of the army, and the company commander is entirely responsible for the working of the men under him. His daily table of work should be formed upon the following principles:—

1. Watching the character of the men under his command.
2. Seeing to the uniforms, arms, and equipment.
3. Inculcating into the minds of the men that their lives are the property of the Emperor.
4. Making the men do their duty for duty's sake, and to teaching them to seek keenly after prestige.
5. He must be strictly impartial; must never use rough language, and should avoid all appearance of familiarity.

He should, to a certain extent, share his responsibilities with the officers under him, and they in turn should pass down this chain of responsibility through the non-commissioned officers to the "superior soldiers" (*jo-to-hei*).

Old soldiers have no direct influence in training and drilling the young soldiers, but their indirect influence is immense; as they are much more with the men than the officers or non-commissioned officers, they should be very carefully watched, and any evil influences should be sharply checked. We used to have many instances of cruelty and bullying by old soldiers, and although this practice has now fortunately ceased, the effect of old soldiers retiring from active service may not always be adantageous to the recruits, and it is now suggested that these men should occupy rooms apart and mess together, and that only specially selected men should come into direct contact with the recruits.

Jo-to-hei (superior soldiers).—These men form almost the most important branch of our army; they come more and earlier into contact with the recruits than either the officers or non-commissioned officers, and the basis of the character and discipline of the men of a regiment is largely dependent on their *jo-to-hei*. The *jo-to-hei* are the limbs of the Commanding Officer. (This is a Japanese military proverb.—J.L.) It is incumbent upon the officers to support and uphold the authority of these *jo-to-hei* in every possible way, and to differentiate clearly between them and ordinary old soldiers; but it must be borne in mind that these men are not non-commissioned officers, and therefore they should be carefully observed, and any errors they may fall into should be amended with discretion.[1]

It is a well-known principle that the company with the best "superior soldiers" is almost invariably the best company in every way.

CHAPTER II.

The early part of the chapter is a long-drawn-out summary, consisting mostly of very obvious platitudes and (*b*) much repetition.

Section c.—System of Military Education.

Military education aims at 3 main objects:—

1. Military knowledge.
2. Virtue.
3. Physical improvement.

---

[1] As is the case with all short-service armies, one of the chief obstacles to efficiency in the Japanese Army is the absence of well-tried non-commissioned officers. The War Office endeavours to surmount this difficulty by the following system: Sixty recruits join each company on "enrolment day" each year. After three months ten of these are selected as candidates for the "superior soldier" grade. These men live together, and are specially trained in a non-commissioned officer's course by selected officers and non-commissioned officers. This course lasts six months, and if they pass the required tests the men then go back to their companies and are made non-commissioned officers as vacancies occur. They are saluted by ordinary soldiers, and are responsible in great measure for the discipline and interior economy of their respective sections.—J. L.

In order to secure the best results, the instructor must know thoroughly the physical and mental attainments of each man in his charge.

The instructor must have an elementary knowledge of hygiene; he should know something of anatomy, and the effects and properties of different kinds of food, and how to distinguish good water; he should know something of dentistry and chiropody, and he should have enough medical knowledge to be able to teach his men how to stanch blood, how to deal with those who faint from hard work or during great heat or cold, and simple remedies for skin diseases, such as chaps and chilblains, and for the early stages of venereal. He should pay particular attention to teaching the men how to look after their feet.

The book gives a list of remedies for each of the above complaints. I think that the last is the only thing worth translating, as no foreign officer can fail to be impressed with the marvellous condition of the men's feet after route marches and manœuvres. In a very severe week's work which I did in the north, out of 400 men there were only two casualties from sore feet. The boots hardly deserved that name, the roads and weather were very bad, and the marches averaged in length 24 miles a day. In my opinion, however, this satisfactory result was mainly due to the fact that a large number of zori (the Japanese straw sandal) were carried, and whenever necessary, were worn by the men. These not only greatly relieve the feet, but must be a considerable aid to marching, as linen straps support the ankles.

The feet must be kept very clean, and the toe nails kept short. There should be frequent inspections, and anything amiss must be attended to at once. Stockings with holes must on no account be worn. Any chafing on the march must at once be treated with *bonsoko* (a sort of black plaster with ointment), all water blisters must be pricked with a needle, and anointed with *tsubami-eo* (ointment or oil made from the seeds of the magnolia). The feet should be treated with this ointment before starting to march.

Exercise is most important, but great individual care must be exercised, and it must not be overdone. It must be regular.

During field exercises it is most important to avoid casualties, and men falling out. Climate, weather, and the lie of the land must be taken into consideration.

Kenjitsu.—Bayonets and fencing gives men confidence in the use of weapons, but it is a great strain upon the heart, and only exercises one set of muscles. The body must be well protected, and instructors and skilled men must on no account punish beginners severely with whom they are fencing.

Swimming, gymnasium, fencing, and all kindred forms of exercise can only be made really useful if made interesting.

The points most to be looked to in physical training are the strengthening of the instep, and of joints, such as the knee, and the teaching of men to run short distances (from cover to cover) at a good pace, to climb, jump, and surmount obstacles.

Men must be taught observation, and to remember what they have seen. This can best be done on route marches, and field work generally.

c^3. The order of teaching is, first to give the men a thorough individual grounding, then to make them keep up what they have learnt while doing squad and company drill.

Men must be taught to look after themselves, and to think for themselves when left without their officers.

c^4. The general scheme of instruction after the company drill is over, should be as follows:—(1) Work of the orderly (to take messages quickly and accurately); (2) route marching; (3) work on advanced and rear guards; (4) camping; (5)bivouacking; (6) night work; (7) exercise in training and detraining, and embarking and disembarking; (8) how to bring up and distribute reserve ammunition to the firing line.

A diary must be kept both by the instructor and the soldier, giving full details of the daily work. This must be frequently inspected by superiors.

c^5. All exercises must have some object in view, and must be so contrived as to force the men to think for themselves.

Discipline must include the *moral* and honour of soldiers. If a soldier performs a wrongful action, he must be made to understand that the discredit attaches to the whole army.

CHAPTER III.

GENERAL PRACTICES.

With shooting, as with all other military exercises, early training is most efficacious and important. Soldiers must get a good grounding, not alone in marksmanship, but also in the construction of the rifle and the projectile, in the best ways to preserve the rifle and keep it clean, and in the penetration and flight of the bullet.

A musketry diary must be kept by every soldier, accurately giving his daily score, and any other matters of interest.

Education of men with the Colours.

The unit of instruction is the company; instruction is given in several stages (here follows a detailed list of the stages, and instruction given in each of them).

During the first year their work is mostly physical. The officer commanding a unit must tell off a subaltern in each battalion or unit under him, whose duty will be to instruct the junior non-commissioned officers and superior soldiers, before the recruits join.

In instructing recruits, instructors must speak very plainly and use simple language; they must never lose their temper, and must bear in mind the great difference between civilian and military life. Recruits on joining come into an entirely new life, and are like infants and very easily become discouraged or flurried.

[Note.—Paras. 311 to 581 consist merely of examples of diaries to be kept by officers, N.C.O.'s, and men, and also schemes tactical and other.]

P.581 (Training of Reserves).—The first Reserve only do 90 days, and can be taught very little about the real duties of a soldier in that time, but they can be taught the "spirit" of soldiering, and if properly handled may return to their homes impregnated with good *moral* and patriotism. (Literally, the virtue of the Emperor.—J.L.) If this spirit can be produced, their other military training is of small importance.

Their training should be divided into two stages, and after each stage there should be a rigorous and individual inspection by the commanding officer.

Order of Training.—1st Term, two months.—Individual drill, gymnasium, Morris tube, squad drill, judging distance, bayonet and fencing, sectional drill, field work.

They must also learn badges of rank, and distinctions of uniform, first rules of military and martial law, care of rifles, theory of shooting, and they must learn by heart the Emperor's address.

EMPEROR'S ADDRESS.

"Know ye our Subjects."

"Our Imperial Ancestors have founded our Empire on a basis broad and everlasting, and have deeply and firmly implanted virtue; Our subjects, ever united in loyalty and filial piety, have from generation to generation illustrated the beauty thereof. This is the glory of the fundamental character of Our Empire, and herein lies also the source of Our training. . . . . bear yourselves in modesty and moderation, be filial, and be benevolent. Develop intellectual faculties, and thereby advance the public good. Respect the Constitution and observe all laws. Offer your lives courageously to the State when emergency arises, and thus guard and protect the prosperity of Our Imperial Throne, cœval with heaven and earth. So shall ye render illustrious the best traditions of your forefathers. It is Our wish that ye lay to heart with all reverence the teaching bequeathed by Our Imperial Ancestors, that we may all thus obtain great virtue. The 30th day of the 10th month of the 23rd year of Meigi—Imperial Sign Manual and Seal."

Second Term for 1st Reserve : One month.—Company training, field entrenchments, and entrenching positions, Red Cross and first aid rules, guards, and outposts, rules of sanitation, then, final instruction by commanding officer.

After this inspection the men generally do a week of forced marches, and are inspected on their return.

P. 583: The Spirit of the Japanese Soldier.—The soldier must be acquainted with the records of his regiment, and must heartily obey his superiors in all regiments, and not alone those of his own. He must never require to be given any order or told of any regulation more than once. He must cultivate the spirit of patriotism and self confidence, but must always be outwardly modest and self-deprecatory. He must always feel that he is individually a better man than any enemy. He must remember that the attack, if prudently carried out, is always preferable to the defence. He must learn to think for himself and be self-reliant. It is disgraceful to shirk duty when the eyes of your superiors are not on you. He must be true to his comrades. He must remember that his body belongs to the State, and must therefore take all possible physical precautions.

Preparations for War.

Arms and accoutrements must be kept spotless, and special care must be paid to them after night work.

In peace, scouting should be practised chiefly at night. Crawling, silence and invisibility must be sedulously cultivated.

Guard duties, on which the safety of the army may one day depend, must be carried out most conscientiously.

Placing obstacles in the probable lines of the enemy's advance is a very difficult work, and should be much practised.

Running swiftly over short distances is one of the most important necessities for an infantry soldier. At least 10 miles a day should be marched in fine weather, and in marching, men must carry the same weights as they would have to do on service.

Doubling long distances is very important; as also is jumping.

All soldiers must be specially trained in mountain work, in embarking and disembarking from railways and ships, in pitching tents and bivouacking, in cooking, entrenching, surmounting and demolishing obstacles, shooting up to 2,000 yards, particularly at the sky-line. Finding and distinguishing killed and wounded; bringing up and distributing reserve ammunition; judging distance up to 1,000 yards, whenever possible, in walking over ice or frozen ground; but above all, to move noiselessly and skilfully at night, even when in open order, and if left suddenly without their officers, to be able to continue their work without flurry, confusion, or delay; to attain this latter object it cannot be too strictly impressed upon officers that before starting on any work, every man under their command must be absolutely cognisant with the scheme.

Note.—The Japanese do an enormous amount of night work, and it is most interesting for any foreign officer to watch. I did some field manœuvres with the 29th Regiment once in the forests in the north. We always did our work at night.—J.L.

Infantry and artillery must be specially trained in changing their objective intelligently. Cavalry must be specially trained in opening out and closing quickly when moving at a good pace.

p. 626. Instruction of "Superior Soldiers" (jo-to-hei).—It must be impressed upon these men that they are the most important branch of the army, that they are the models for the men. General teaching is not so important as the inculcating of the military spirit. Their instruction must be practical rather than theoretical, and should vary individually according to ability. They must have impressed upon them that almost their most important duty is to be absolutely conversant with the character and capacity of every individual man under them.

The rest of the chapter is given up to the special instruction of *shikwan kohosei* (officer candidates), of the *shigwanhei* (one-year volunteers), and of the six weeks' men in the reserve; also a short sketch on combined tactics, with nothing of interest in it.

In the summary, the author states as his opinion that the strength of an army lies in its instructors, viz., officers, non-commissioned officers, and *jo-to-hei* (superior soldiers), especially these latter. He says that his war experience confirms him in his formerly-held belief, that these "superior soldiers," owing to their coming more into contact with the men than either officers or non-commissioned officers, and always living with them, are of the very greatest importance. Duty must be the watchword of all, and every man must make his own personal advantages subservient to the common good.

The author then concludes with a long series of deprecatory references to the book, and in explaining the reasons why it is so badly compiled.

THE WAR IN THE PENINSULA, 1808-14.

VALUABLE NOTES FROM RECENTLY DISCOVERED DIARIES OF THE WAR, NOW BEING PUBLISHED IN "EL IMPARCIAL," OF MADRID.

Précis by Major-General J. C. DALTON, R.A.

Continued from August JOURNAL, p. 1076.

IV.

COUNCIL AND REVIEW AT UTRERA—ENGLISH HELP DECLINED. THE ADVANCE—JUNCTION WITH THE TROOPS OF GRANADA. GRAVE ERROR OF THE COUNCIL OF PORCUNA—CASTAÑOS' SECRET.

On 26th June, 1808, the President of the Junta, Saavedra, held a farewell review of the army under Castaños at Utrera, followed by an important Council of War with General Castaños and all the principal commanders and heads of departments, at which no matter affecting the efficiency of the force and strategical situation appears to have been lost sight of.

The superiority of the enemy in cavalry was acknowledged, the Spanish force being able to rely only on 2,500 sabres. Hence it was resolved to avoid as far as possible any ground suitable for that arm, and that the best policy was "to manœuvre round Dupont on his flanks and rear, cut his communications, and isolate him from his source of supply, etc., to which end the irregular cavalry and sharpshooters were well suited. That it was necessary at once to arrange for a strong division to shadow him which would spy out the approach of reinforcements, and if possible attack his two detached corps or interfere between them."

If Dupont persisted in remaining in Andujar he must be attacked at the most opportune moment, "without allowing the clamour and natural impatience of the peasants, due to the short time which had been available for disciplining them, to prevail." Finally it was decided to keep the French constantly on the *qui vive*, "in order that the climate should work its effect on troops not accustomed to the strength of the Andalusian sun."

The Council was over at one, and by 4 p.m. the army was already formed up in the famous encampment of La Dehesa. More than half the force had not got uniforms, but later on this was remedied by making two soldiers divide between them the equipment intended for one.

The work of training now proceeded diligently, and progressed from the most elementary instruction to grand manœuvres. The force rapidly gained discipline, and an English colonel who was with the President and saw the troops, trained for less than a month, remarked to the latter: "Frederic II. would not be ashamed to adopt this fine army as his own."

The President returned to his post highly content with what he had seen, and resolved to give the general a free hand, "because his prudence and moderation were a security that he would not abuse the trust reposed in him." The Junta confirmed this view, and the result was that Castaños had practically supreme authority at the head of the army.

On the morning of the 29th June, Major-General D. Tomas Moreno appeared before the Junta and informed them that the general had left for Cordova, and hoped the President would accompany him. This the Junta could not grant, but Count Tilly begged hard to accompany Castaños, and permission was granted.

Moreno announced that the English had requested to be allowed to join their force of 6,000 men (drawn from the troops at Santa Maria and from the ships of the squadron) to Castaños' force, but the general had delayed answering on the pretext that the Junta alone could give authority. At the same time it was his own opinion that "the English would wish to carry off all the laurels if the expedition were successful, and would put all the blame on the Spaniards if it were the reverse; moreover, he did not think their assistance necessary, which would always cause him much embarrassment." In this the Assembly concurred.

When Moreno returned he took with him from the Junta the balance of the money, supplies, and ammunition which still remained in Seville, the rest of the train and horse artillery "recently invented, and very useful," together with 150 field tents made in a few days, more than 500 horses procured on requisition within less than 48 hours, and a quantity of mules the gift of private individuals.

At 8 a.m. on 30th June a despatch from General Pena announced that Castaños had departed from Cordova, that the advanced body of 1,909 men and 216 horses, under Brigadier Venegas, had marched and would be followed by the first division, under Coupigné, with 2,828 infantry and 821 cavalry.

"The Junta begged the Archbishop to give orders that in the Cathedral, in all parish churches, and in the convents, prayers should be offered to the God of armies for the success of the Army of Seville going forth to fight for its religion, its King and country."

On 3rd July the 2nd Division (4,488 infantry and 426 cavalry) left Utrera early, under the command of Field-Marshal D. Narciso de Pedro. The same night the 3rd Division, under Field-Marshal D. Felix Torres, with 4,691 infantry and 558 cavalry, and on the 4th the reserve of 10,466 men, including 611 cavalry. "This fine army numbered 26,403 men, including 2,632 cavalry. The artillery consisted of 60 field guns, fully equipped, and 3 companies of horse artillery."

The gallant affair at Jaen and the entry of a Spanish squadron under Fonegra into the Guadiana caused enthusiasm.

On 12th July Castaños reported the arrival near Bujalante of the troops from Granada — some 6,000 men of excellent quality, well clothed and disciplined, under the Captain-General D. Ventura Escalante, with Field-Marshal Reding as second-in-command. The armies were to be united in Porcuna, where commands were to be allotted and the plan of attack formulated.

"The *Express* related the wonderful confidence and joy which animated the towns, impatient for the moment to arrive when the Spanish soldiers could get to grips with the French, whom they believed to be inferior in numbers and quality—a happy error which had spread freely, and in which for the present it was necessary to keep both people and troops."

On 14th July a fresh message detailed the distribution of the enemy (which is well known) and fixed the plan of campaign, "which, somewhat extended, was that laid down in Utrera."

Castaños, notwithstanding that Escalante was his senior in years, "maintained with him the utmost harmony without sacrificing any of his authority."

The Editor of General Girón's Notes is now able to produce a new and important fact which reflects a brilliant light on the character of Castaños. Hitherto historians have credited the Council of Generals at Porcuna with being ignorant of the arrival of the French General Vedel, and have attributed the temerity of Castaños, which resulted so successfully at Bailen, to ignorance and not to cool valour.

The manuscript, however, says: "The Guard Patria, who brought the mail, handed secretly to the President a letter from the general, in which the latter enclosed some states which General Dupont was sending to the Chief of the Staff Beliard, and which were intercepted on 12th July. From these it was evident that as soon as he could join hands with General Vedel, then hourly expected, Dupont's army would amount to 23,964 men, including 3,500 cavalry. He still demanded more reinforcements, insisting that the insurgents, allied with the English, were surrounding him and endeavouring to attack him with very superior forces; that he was short of food; that the heat was unbearable; and that the Spaniards were very enthusiastic on the anniversary of a great battle (Navas de Tolosa) which they had gained over the Moors. General Castaños reserved these states, and did not communicate them to anyone, fearing the bad impression which they might make on the army when it realised that the enemy was so strong. He advised the President to keep it to himself; also because at the present moment nothing could be worse than to unsettle the troops. He spoke of the bad time which the people and even his army were giving him, provoking and urging him to attack, at an unsuitable time, an enemy reported much weaker than it was in reality. He however, would precipitate nothing, and when his measures were taken he hoped to be able to attack the two generals advantageously before they could unite."

Castaños' position could not be more anxious and difficult. His army, however efficient it might appear, was composed of double the number of untrained troops to old soldiers. He knew from experience of war that in such a force enthusiasm replaces and overpowers discipline; it is irresistible so long as all goes well with it, but it is incapable of waiting patiently for the opportune moment, possibly necessitating a temporary retirement before it can reap the fruits of the first attack. He had to listen to those who urged action, and knew that if he gave way to them the consequences would be disastrous, and that on him alone would the blame descend.

He had not before him (as his army fondly imagined) Dupont's 12,000 men, decimated by dysentery and demoralised by retreats and inaction, but 24,000 French troops whose victorious standards had dominated Europe.

When weighing the relative strengths and qualities of the opposing armies, Castaños felt that he was not justified in leading to disaster his army, one month old, so full of youth and joy, and marching to battle as to a festival. Neither dare he dissipate by one word the general error and thus throw cold water on the enthusiasm and ardour of his men.

"Alea jacta est," might have murmured Castaños, who breathed the ever-youthful breath of immortal Rome, whilst Saavedra, compromising himself by keeping that fateful secret, exhorted him "to follow on as he was doing in the footsteps of Fabius the Great."

Ah! in this difficult position the prudent advice to imitate the wise Cunctator, the real commander and sole guide of disciplined and warlike legions, did not apply. The Spanish general was to obey fatally the irresistible impulse resulting from the national enthusiasm, and, yielding to the pressure of those he commanded, to advance to his front; and thus the great conqueror marched to the unequal contest, with the resignation of a fatalist, with the faith of a Christian, obliged to fritter away his prestige in reasonable counsels, more than often hearkened to with impatience and disdain, but preserving in his soul with robust serenity that grave secret which made the General-in-Chief the only prudent—in reality the only rash—personality of the whole force.

V.

CASTAÑOS IN LOS VISOS—TORTURE OF TANTALUS—DUPONT'S FEARS—VILLANUEVA AND MENJIBAR—UNPUBLISHED LETTERS OF CASTAÑOS—HIS SECRET HOPE.

On 15th July, at dawn, the third division, under Field-Marshal D. Felix Jones, and the reserve division, under General La Pena, occupied Los Visos of Andujar, heights which the river separates from that town, and within cannon shot of the bridge over the Guadalquivir. The enemy had fortified a bridge head with works of some importance armed with sufficient guns; his bivouacs and parks were situated at the debouch of the town and *à cheval* of the Madrid road.

"Our appearance on the heights," writes Giron, "must have surprised the enemy, because we noticed in his camps that hurry which is born of surprise, and, very soon, fire was opened on our troops from the guns of the bridge head, which, being of small calibre, could barely range as far as our lines, The Commander-in-Chief sent out a battery of horse artillery, which replied to the enemy's guns, and a few rounds were fired without result; but under cover of this battery another battery of position was established more to the right to bear on the parks and bivouacs, the fire from which soon put them in confusion and obliged them to shift camp."

At this time the Andalusian sun, which was to play an important part in the battle which was to follow, interfered, and not in favour of the Spaniards. The enemy occupied the right bank of the river, which abounded in trees, whence the French sharpshooters, protected and hidden by the foliage, prevented the Spanish infantry from approaching the left bank, which was bare.

This caused much inconvenience, and hindered the Spaniards from getting at the water. "The heat was excessive, and the streams which ran in the rear of our position were all brackish. Under penalty of life the villagers near our camp were ordered to bring whatever vessels they possessed full of water, and though this provision, punctually made, remedied to some extent the state of affairs, it was, however, so bad that some soldiers, unaccustomed to such burning sun, died of suffocation, and others less patient banding into big groups rushed to the river to drink, some fighting whilst the others drank."

Under other circumstances this difficulty would have sufficed to abandon the position, but it was necessary to keep it in order to hold the enemy and conceal the movements of the first and second divisions. These were approaching Menjibar and Villanueva de la Reina, points on the river occupied by the French, whilst a light detachment, composed of some sharpshooters from Cadiz, and a few more, suitable to the service, under command of the brave Mourgeon, passing the Guadalquivir by the bridge of Marmolejo, were directed towards the passes of the Sierra in rear of the French.

"The enemy, uncertain in his position, but without making up his mind to vacate it, either from pride or fear of his government, seemed not to know how to attack us or retire; he lost valuable time, in which he could have done either, let the opportunity slip, and paid the invariable penalty of vacillation and perplexity."

There is no doubt that Dupont was a prisoner to extreme fear, difficult to explain in so brave a soldier, as the following curious anecdote will prove:—

"The inhabitants of Andujar stated that General Dupont confessed himself at loss on seeing our columns deploy on the neighbouring heights; but his staff officers, in order to set his mind at ease, having assured him that these were our peasant troops who were undisciplined and of no account, he mounted to the church tower at the hour of muster to note if we showed signs of any discipline. On seeing the battalions forming up, marching, then manœuvring with the usual regularity of troops, he expostulated with those who had wished to deceive him, took refuge in saying that those troops he saw were Militia much strengthened by outsiders, and would be useless on the day of battle; to such an extent did they wish to deceive him, trusting solely to his luck."

Nothing fresh occurred during the 16th at the front except desultory firing, and the movement of the 3rd division, which extended its right wing and occupied a neighbouring height. Being conducted under distant artillery fire, it cost a few lives, but was valuable as it tended to familiarise the recruits with the sound of artillery fire, and they bore the test well.

On that day, the 16th, the first division was in Menjibar, disposed so as to force the passage of the river next day, which was held by the French. The second division cleverly effected a similar operation at Villanueva, sending forward parties of cavalry on to the high road to intercept the enemy's communications.

By evacuating Villanueva, the enemy lost the mills which supplied him with flour, and "his soldiers found themselves obliged to crush the wheat between two stones in order to obtain some food."

On 17th July, at daybreak, Reding's division passed the river by the ford of the Rincon, fighting from 9 a.m., the well-known action of Menjibar in which the French General Gobert was killed. As their orders directed them to operate in conjunction with the second division, Reding had to return to Menjibar after the action. The same night both divisions joined hands there and moved on Bailen, a town situated on the high road, which was the enemy's line of retreat.

Thus the Spanish were ready to march at daybreak on the 19th "to attack the enemy in his position at Andujar on his left, whilst the third division and the reserve were to do the same on the right and threaten him in front, the detachment of Mourgeon being *en évidence* in his rear." Such were the dispositions, but the movements of the enemy during the night made it necessary to vary them.

As we see, nothing occurred which had not been foreseen, and if it has to be confessed that fortune favoured the daring plan, it would be unfair to attribute its happy result wholly to chance. In an unpublished letter, which the editor has seen, written by General Castaños in Barcelona, on the 11th November, 1818, the conqueror of Bailen, having been requested by an historical commission (whose work, admirably sketched out, unfortunately never reached maturity) to impart his information "to the memory, intelligence, and felicity of penmanship" of Giron, writes thus to the latter, ". . . . . and thus, taking you back to the first part of the year 1808, which is not altogether easy, considering the state of exaltation of our minds at the time, and the coolness which on the day took possession of them, you have to supply the information which is demanded that we may have an accurate account of what we then did; it being necessary to repudiate the idea, which generally obtained, that the affair was due to chance; and it will be as well therefore to say something of that which was agreed to in Porcuna, which later had to be varied in form because the actors who were to have played the chief part had to take second place, but should not be deprived of the merit which they really showed in all they carried out."

Not for a moment did the smallest rivalry impair the noble accord which existed between the conquerors, who gained immortal glory on that occasion. Certain uneasy spirits attempted in later years to excite antagonisms and raise comparisons which these veterans would never have admitted, so well-defined were the pre-eminences and responsibilities in the army at that time.

Battle was given when and how it should have been, without impatience or fear, and in some ways favoured by circumstances, so as to draw from Thiers the lamentation: "I do not accuse Providence. After Bayonne we no longer deserved good fortune."

The conviction of the justice of their cause, on the other hand, animated the Spaniards. "Seldom were higher interests trusted to the fate of a battle," says Giron, as a prelude to some valuable military reflections which, for brevity's sake, must be omitted here, "but circumstances imperiously demanded that all risks should be taken. The fact of its being an entirely popular war; the exasperation in the public mind at the delay which it considered voluntary, because it was prudent; the decadence and ruin which further delay would have produced even if it had been convenient; the renewed confidence which would have been imparted to an enemy, who is as easily exalted as he can be dispirited; and the difficulties which the smallest suspicion by the people of irresolution on our part would have caused; these were all powerful reasons for hazarding in so decided a manner the fate of our arms."

"The reasons which decided King Alfonso VIII. nearly 600 years before, to make a frontal attack on the enemy in his position at the *Puerto del Muradel*, against the advice of his generals, who all voted for a more deliberate and safer method of operation, were not so strong as those sketched above; he fought and conquered, not far from the same place and at the same period of the year which marked the battle of Bailen, both the site and date of which battle seem destined by Providence for the most noted triumphs of our arms."

(To be continued.)

THE JAPANESE ARMY IN 1908.

(Translated by permission of the Minister of War from the *Revue Militaire des Armées Etrangères.*)

THE success which attended the Japanese arms in the late war does not seem to have inaugurated in that Empire such an era of repose as might reasonably have been expected. At no time, and one might almost say in no country, has preparation for war been the object of greater solicitude or exacted greater sacrifices than are now demanded of the Japanese people.

In 1907 the Parliament of Japan approved a plan of Army reorganisation which was, theoretically, to have been completely carried out in eleven years; and the sum of 170 millions of yen (about £17,500,000) voted for this reorganisation was to have been spread over the above period, though the expenditure for the first six years (to 1913 inclusive) would have been much greater than in the remaining five. Lately, however, the Japanese War Minister, under the pressure of financial necessity, has agreed to reductions of expenditure in the first six years amounting altogether to 25 millions of yen, under the head of works, and to 12 millions of yen on account of the actual reorganisation. These reductions would apparently delay to an appreciable extent the completion of the scheme, but it is believed that they will be more apparent than real.

It is tolerably certain that the Japanese Government, having settled its programme for the augmentation and reorganisation of the Army, will find the means—as it did on the very morrow of the war—to carry out its plans in their entirety, and without delay, perhaps much more rapidly than official pronouncements would lead one to suppose.

The scheme includes the creation of certain perfectly new organisations (divisions, etc.). How many such units have already been formed? And to what extent has the scheme already been carried into effect?

It is difficult to arrive at very definite conclusions on these points, for in Japan nothing is published regarding the Army, and all information on military matters is regarded as an official secret, and is withheld from the public. It may safely be said, however, that if the new organisations have not yet been constituted, they will be very shortly. The two new divisions, for instance, include a large number of existing units, and there can be no doubt that if war threatened, all the new bodies would promptly become actual realities. It may therefore be said that the Army, even at the present moment, is to a great extent in the state aimed at in the scheme.

It is this new organisation which we propose to consider; and the time is not inappropriate, as the eyes of all nations seem to be more and more turned towards the Far East.

We will take first the organisation of the Japanese Army in time of peace, and afterwards its organisation in war.

The Organisation of the Army in Time of Peace.

CHAPTER I.

Recruitment—Territorial Organisation.

Recruitment.—The whole organisation is based on the law of recruitment, and it is necessary to clearly understand its mechanism. The law dates from 1896; it was modified in the course of the late war:—

First, by the Imperial Decree of 29th September, 1904, extending service in the *Kobi* (2nd Reserve, or Reserve Army properly so called), and abolishing the 2nd Class of the *Hoju* (Reserve of Recruitment).[1]

Secondly, by the Imperial Decree of 21st April, 1905, placing at the disposal of the Minister of War, for the purpose of strengthening the Army in the field, certain categories of men, in particular those composing the 1st Class of the *Kokumin* (Territorial Army or *Landsturm*), and also those of the 2nd Class.[2]

Lastly, after the war the annual Act for the training of 1907-08 reduced provisionally the three years' term of service with the colours to two years, in the case of the infantry.

Recruitment in Japan is based on the principle of personal service, obligatory and universal. That is to say, Japan has adopted the European principle of "the nation in arms."

Military obligation begins at 17 years of age and ends at the age of 40. The young men are not called up to the colours until the year following that in which they attain the age of 20.

The operations preceding the call to the colours consist of:—

---

[1] The *Kobi* answers to the German *Landwehr*. The *Hoju*, which the writer calls the "Reserve of Recruitment," is known in other Armies as the *Ersatz*, or Supplementary, Reserve. This order quoted had *retrospective effect;* that is to say, all the men who for five years back had passed into the Territorial Army, suddenly became liable to service in the field, and they were freely used!—*Trans.*

[2] Practically the whole of the existing Territorial Army was made liable to service in the Field Army by the first proclamation. The second extended the liability to the *levy en masse, i.e.,* the second part of the *Kokumin*, which includes every able-bodied man in the country.—*Trans.*

1. A medical examination of a very stringent character, following which the young men are classified in three categories:—

The absolutely fit;
The fit;
The unfit. These latter are not required to perform any military service.

The exemptions are certain categories of young men who have obtained diplomas or who occupy recognised positions in the scholastic profession or in the clergy; also those entitled by law to exemption for family reasons.[1] The title to exemptions in these latter cases is very clearly defined.

The medical examination takes place in the month of April or August of the year in which the recruit is called up.

2. The drawing of lots among the "absolutely fit" to determine those who are to form the annual contingent.[2] The number required in each year is announced in an Imperial Decree. If the number of "absolutely fit" should chance to fall short of requirements, those classed as "fit" would draw lots to make up the necessary strength. Such a contingency, however, has not presented itself so far.

Active Army and Reserves.—The Japanese Army comprises:—

(1) The Active Army, or *Geneki.*
(2) The Reserve of the Active Army, or *Yobi.*
(3) The Army of Reserve properly so called, or *Kobi.*
(4) The Territorial Army, or *Kokumin* (1st part).[3]

Besides these there is the overplus of the annual classes which is passed into certain categories, forming supplementary Reserves, which receive little or no instruction, and which constitute the *Hoju* and (a portion of) the *second* part of the *Kokumin.* The latter is the mass of men from 17 to 40 years of age who do not belong to any of the categories mentioned above.

1. *Active Army or "Geneki."*—The young men serve two years in the infantry and three years in all other arms, even

---

[1] Such as eldest sons of widows, and the like. The exemptions generally resemble those which obtain in Germany and most European countries.

[2] The terms "annual contingent" and "annual class" are frequently used as synonymous. But strictly speaking the latter means all the young men physically fit for service who attain the age of 20 in any given year, while the annual *contingent* is the number of recruits required to fill up all branches of the Army to full peace strength after the departure of those whose term of service with the colours has expired. The balance of the young men who are physically fit is passed to the Supplementary Reserve (*Hoju*).—*Trans.*

[3] (2) is entirely absorbed into (1), including its depôts, on mobilisation, (3) is the *Landwehr*; (4) the organised *Landsturm.—Trans.*

in the transport train (except drivers, who serve for six months only).

A certain number of young men form a special category. These are the *one-year volunteers,* corresponding to the same class in the German Army. Some of them become officers and make the Army their career for life; others become reserve officers. There are about 1,500 volunteers each year.

Reserve of the Active Army, or Yobi.—After their two or three years' service in the ranks the young men pass into the Reserve, or *Yobi.* They remain in it for five years and four months, or four years and four months, according to whether they have served two years or three years in the Active Army. The odd four months in each case corresponds to the time considered necessary for the class which succeeds them in the ranks to be sufficiently trained to be mobilised in case of necessity.

The men in the *Yobi* are supposed to undergo two trainings of sixty days each; but in practice the Reservists are only called up for two manœuvre periods, one of four weeks, the other of two weeks. Further, in a general way the number and duration of the trainings undergone by the Reservists are limited by the amount of money available.

On mobilisation the men of the *Yobi* raise the units of the Army from peace to war strength. The surplus men remain with the depôts.[1]

3. *The Army of Reserve properly so called, or the "Kobi" Army.* — This Reserve is often incorrectly called the Depôt Army. It corresponds to the German *Landwehr.* The men pass from the *Yobi* into the *Kobi* Army, and remain in it for ten years (instead of five as before the war). The soldiers of the *Kobi* are supposed to undergo two trainings of sixty days each in their ten years' *Kobi* service. They form the units of all arms of the *Kobi* Army. This force furnishes brigades corresponding in number with the divisions of the Active Army; also troops for service on the lines of communication and troops for sieges or for the defence of fortified places, etc.

4. *"Kokumin," 1st Part,* or Territorial Army. — This organisation corresponds to the German (organised) *Landsturm.* The men remain in it from the age of 37 until the expiration of their military obligations; that is to say, for two years and eight months. They do not undergo any training. The *rôle* of the *Kokumin* is the defence of the national territory.

Other Categories: The "Hoju."—The remainder of the young men classed as "absolutely fit," after deducting the annual contingent, also those classed as "fit," within the limits of a number fixed annually, form a separate category called the *Hoju*. The proportion of the "fit" annually passed into the *Hoju* to the total number of young men so classed is not known.

---

[1] If the whole of the men over and above field service strength were really to go to the depôts, each battalion would have a depôt about 800 strong without calling up any of the men from the Supplementary Reserve (*Hoju*).

The *Hoju* serves as a Reserve of Recruitment (German *Ersatz* Reserve) to ensure the maintenance of the effective strength in time of peace.[1] For this purpose each regiment has constantly attached to it for instruction 150 men of the *Hoju*. In principle these young men remain with the regiment for three months, after which they are released and immediately replaced by another batch of *Hoju* recruits of the same strength. Besides this recruit training the men of the *Hoju* serve in the ranks for 90 days during their first year. They are also supposed to undergo two trainings each of 60 days in their second and fourth years of service. But it must be added that it is doubtful whether these reservists are really compelled to go through such long periods of instruction. Further, it is given out that the Minister of War intends to do away with the instruction of the *Hoju*, and even to abolish the *Hoju* altogether, for with a service of two years in the ranks the number of men receiving a complete training is so largely increased that a supplementary reserve can be dispensed with altogether.[2]

The men of the *Hoju* remain in it for seven years and four months, and are then passed to the *Kobi*, or Reserve Army, entering it at the same time as their comrades coming from the Active Army.

On mobilisation the men of the *Hoju* fill up to war establishment the transport trains and the units of other subsidiary services belonging to the Field Army. They also reinforce the depôts, etc.[3]

Kokumin, 2nd Part.—Every Japanese fit for military service and not belonging to one of the categories mentioned above belongs during the period of military obligation, *i.e.*, from 17 to 40 years of age, to a single category known as the second part of the *Kokumin* (*Landsturm*, 2nd ban). This category therefore includes:—

1. All the young men of 17 to 20 years of age.
2. Those exempted from military service.
3. The balance of the men classed as "fit" who have not been passed into the *Hoju*.

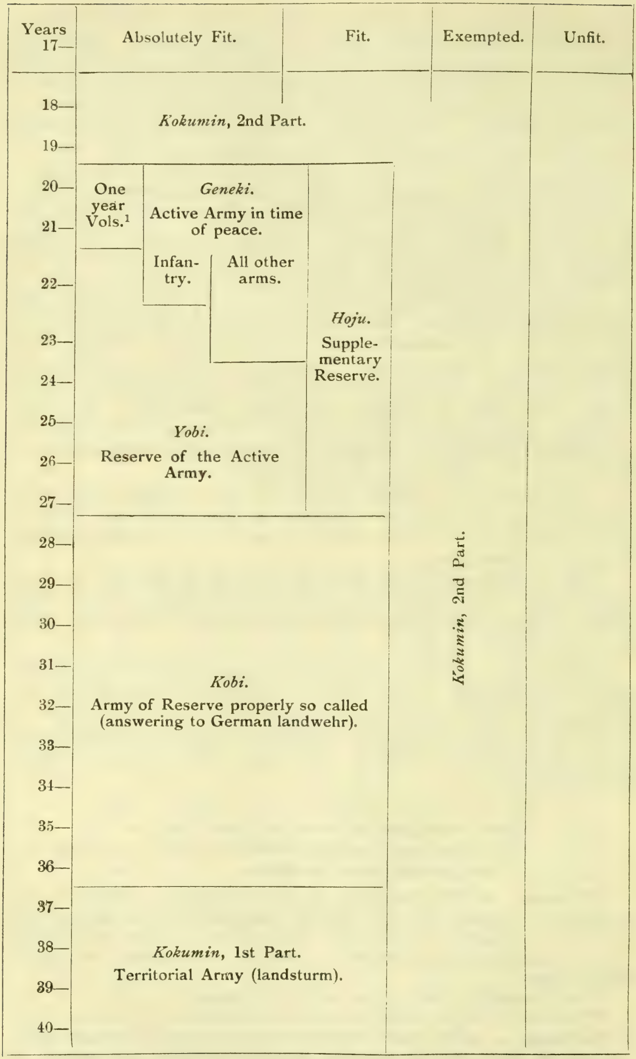
The men of this category do not receive any military instruction. During the late war an Imperial Decree placed the

---

[1] *Sic* in original, but it is obvious that the writer meant "in time of war."—*Trans.*

[2] *See* Translator's note at the end of the chapter.

[3] The *primary* object of any *Ersatz* or Supplementary Reserve is to fill up the depôts so as to ensure a constant supply of men to make good losses in the field. But this function may be modified by the increase of fully-trained men consequent on the adoption of two years' period of service. *See* also note at the end of this chapter.—*Trans.*



---

[1] The one-year Volunteers may do their year of service before the age of 20.

whole of them at the disposal of the War Minister for the purpose of reinforcing the Armies in the field. Thanks to the warlike spirit and natural discipline of the Japanese nation, young soldiers of 17 years of age were seen towards the close of the war behaving steadily under fire, although they had had only a few months' training. The diagram on p. 1214 shows how the various stages of military service are divided over the period of obligation (17 to 40 years of age) in the different categories.

The Resources of Japan from a Recruiting Point of View: Annual Contingent. — The annual contingent has increased largely in the last twenty years. From 17,000 men or thereabouts in 1888, it had risen to 42,000 in 1896, and to 80,000 or 100,000 for the classes of 1904 and 1905 called up during the war. The class of 1906 (which joined the colours in December, 1907) amounted to 120,000. The population of Japan, increasing steadily as it does year by year, can easily supply these contingents. From 45 millions in 1900 the population had mounted to nearly 50 millions in 1906, and the excess of births over deaths is still increasing. In 1907 the number of young men who attained the age of 20 exceeded 520,000.

The Two Years' Period of Service.—The law of 1907-08 introduced the two years period of service for the infantry. According to the declaration of the Minister of War, General Teratsui, it was intended to be a temporary and experimental measure; but there is no doubt that it will become permanent. In fact, the tendency in Japan is to give military training to the greatest possible number of men in order to increase the strength of the reserves immediately available in the event of war. Thanks to the two years' period of service, the Japanese reckon on passing through the ranks 50 per cent. more men than has hitherto been the case. It is thus that the annual contingent which has averaged 80,000 men in recent years has now become 120,000. Japan has obtained this result for an extra expenditure not exceeding 3,600,000 yen (£360,000) per annum, this being the cost of the pay and clothing of the additional men, and of their travelling expenses to and from their homes, increase of non-commissioned officers, etc.

Mobilisable Effectives.—It is not easy to obtain a correct idea of the actual mobilisable strength. To begin with, the exact number of men in each annual class belonging to the different categories is not known; and again, there is no information as to the number of men in the *Hoju,* who should have received at least a rudimentary instruction. Further, for several years back the Japanese Army has been in a continual state of re-organisation.

However, the problem presents itself under the two following heads:—

First,—What would be the number of trained men available for a mobilisation during the present year (1908)? And what reserves would Japan have at her disposal?

Secondly,—What would be the total number of trained men when the new system has come into full operation, supposing that Japan continues to call 120,000 young soldiers to the colours every year?

1. With regard to the strength mobilisable at the present time. We must base our calculation on the strength that Japan had under arms at the close of the late war. At that time Japan had in the field about 600,000 men. This is without counting the men in the depôts, all of whom had had a certain amount of instruction. The above figure includes, however, the two classes of 1904 and 1905, who were actually called out in those years, though they would not ordinarily have been summoned until 1905 and 1906. We must add the class of 1906, say, 120,000 men, called up in December, 1907, and mobilisable in the current year (1908). On the other hand, the two oldest classes, released after the war, have to be deducted. They amount to about 30,000 men. It appears, therefore, that Japan could now dispose of nearly 700,000 men, all completely trained.[1]

It is also necessary to take into account the following, who would be available, if not immediately, at least after a few months:—

(*a*) The trained men who were in the depôts at the close of the war, estimated at about 100,000.

(*b*) The untrained men called up to the depôts for instruction, and the young men called out in advance of their time.

The grand total of all the men available might reach a total of a million.

2. Mobilisable strength when the new system has developed its full effect. For this calculation we ought to know the actual proportion of the "absolutely fit" and the "fit," in the different categories of the Army. The latest official statistics are those of the year 1902. The number of young men attaining the age of 20 in that year was 539,282. Of these, 187,907, say 34.84 per cent., were declared "absolutely fit," and divided as follows:—

To the *Geneki*, 45,000.

To the *Hoju*, 1st and 2nd parts, the remainder of the "absolutely fit." (The orders of the 29th September, 1904, abolished the 2nd part of the *Hoju*.)

Of the remainder, 108,016 (20.03 per cent.), having been classed as "fit," were passed into the *Kokumin*, 2nd part; 49,354, (9.15 per cent.) were exempted for family or other reasons; 194,003 (35.98 per cent.) were unfit.

If we apply these proportions to the class of 1907 (and the classes of the succeeding years), we arrive at the following figures:—

Total number of young men reaching the age of twenty, 520,000; of these the "absolutely fit" would amount to about 182,000, and the whole would be divided as follows:—

---

[1] The translator is unable to follow this calculation

120,000 to the *Geneki* (this is a known number).
62,000 to the *Hoju* (balance of the "absolutely fit").
104,000 to the *Kokumin,* 2nd part (all those classed as "fit.")[1]
52,000 exempted.
182,000 "unfit."

To obtain the total of each category we have only to multiply by the number of years spent in each, and apply the ordinary rule for the annual decrease of strength. We then arrive at the following figures:—

Mobilised Active Army (*Geneki* and *Yobi,* seven annual classes), 742,000 men fully trained.

Hoju (seven classes), 383,780 men partially trained.

Kobi (ten classes), say 780,000 men completely trained from the *Yobi* and 403,000 men partially trained from the *Hoju*; total, 1,182,000.

Kokumin, 1st part (two annual classes), say 115,000 men fully trained, 59,520 partially trained.

Kokumin, 2nd part, three annual classes of young men 17 to 20 years of age, untrained, about one million; also twenty classes of men 20 to 40 years of age, untrained, about two millions. Total of 2nd part of *Kokumin,* three millions of men, untrained but available in case of necessity.

To recapitulate: The new system will eventually give Japan the following strength of fighting men:—

Completely trained, 1,638,000 men, of whom 742,800 will be in the mobilised Active Army or first line, 780,000 in the *Kobi* Army or second line, and 115,000 in the *Kokumin,* 1st part, or Territorial Army.

Partially trained (available to make good losses in the field), 846,000.

Untrained, but can be called up for training as required, about 3,000,000.

This result will not be completely attained for about twenty years, but in the meantime the mobilisable strength, starting with the figures given for the current year (1908) will steadily increase until it reaches the totals given above.

Territorial Organisation.—The territorial organisation follows that of the Army itself; that is to say, it is based on the *divisional district.* To each division of the Army belongs a definite area from whence it draws its recruits, and which supplies its reserves on mobilisation. There are 18 of these divisional districts, the two divisions now in Manchuria and Korea having each their corresponding district in Japan. The Guard Division has no special district; it is recruited from the smaller gentry and landowners of the whole country.

---

[1] But it is quite possible that a proportion of these men may be passed into the *Hoju* and receive a partial training in the transport, hospital, and other non-combatant corps.

As regards the infantry, the divisional areas are each divided into four regimental districts, grouped in pairs, corresponding to the brigades, and apportioned into battalion sub-districts. Other arms are recruited from divisional districts as a whole. (Each sub-division furnishing its quota?) In case of the local contingent being insufficient, it is made up by borrowing from another sub-division, or even from another divisional district.

The battalions of heavy artillery are supplied from the divisional district in which they are stationed. For the recruitment of the (independent) brigades of cavalry and artillery and of the brigade of "communication troops," certain divisional districts are grouped together, and the recruits are drawn from these areas as a whole.

The special troops forming the garrisons of certain islands are furnished locally from the independent districts formed by the islands themselves. The garrison of Formosa is supplied with its recruits from the capital, and the troops in the island of Tsu-shima are also specially recruited.

Translator's Note to Chapter I.

The Two Years' Term of Service and the "Hoju."—The effect of the reduction of service with the colours from three years to two is not always clearly understood in this country. The rank and file strength of a Japanese infantry battalion in time of peace appears to be 556 (as will be seen later on). When service with the colours was for a term of three years, *one-third* of this number was passed to the Reserve (*Yobi*) every year, and the Reserve service being four years, the total number of Reservists per battalion would be 185 × 4 = 740, less casualties; so that about 700 Reservists might be counted on, of whom not less than 400, and possibly nearly 600, would be required to bring the battalion to war strength on mobilisation. To *maintain* it at that strength in the field, the partially trained men of the *Hoju* (*Ersatz* or Supplementary Reserve) were called up to the depôt, where their training was completed, and from whence they were drafted to the service battalion as required.

Service with the colours being reduced to two years, however, *one-half* of the rank and file is passed to the Reserve annually, and they will remain in the *Yobi* for five years instead of four; so that the number of Reservists available per battalion will be at least 1,300 instead of 700. Consequently, it will be possible to dispense with the training of the men in the Supplementary Reserve (*Hoju*) in time of peace, or even to abolish that Reserve altogether, except as regards the men required for the transport and other subsidiary services.

It does not seem, however, altogether likely that this will be done. It hardly seems worth while incurring the expense and making the increased demands on the population involved in the adoption of the two years' system if the additional number of fully-trained men thus produced is to be employed in making good the waste of war, an object which is doubtless of the highest importance, but one which the experience of two great wars has shown to be sufficiently well served by an *Ersatz* or Supplementary Reserve. In Germany, where the two years' system is now fully established, the balance of fully-trained men remaining available after the battalion or other unit has been raised to war strength will, it is understood, be quite otherwise employed. Every regiment is to form on mobilisation half a regiment of Reserve troops, so that a brigade will form a full *Reserve regiment,* and a division a *Reserve brigade.* And it is at least probable that these new brigades will be incorporated in their divisions when the latter take the field, the more so as in Germany the two years' system has been applied to all branches of the service except the cavalry and horse artillery, and there would apparently be no great difficulty in augmenting the artillery of each division in proportion to the infantry.

These things being so, it is not unreasonable to surmise that Japan will sooner or later take a similar course, even if the training of the men in the *Hoju* should be temporarily given up for financial reasons. But unless these are very pressing one would rather expect to hear that the two years' system has been extended to the artillery, and that Reserve brigades are to be substituted for the *Kobi* brigades now attached to divisions on mobilisation.

(*To be continued.*)

NAVAL NOTES.

Home The following are the principal appointments which have been made :—

Rear-Admiral—E. E. Bradford, C.V.O., to be a Rear-Admiral in the Home Fleet. Captains—D. R. L. Nicholson to "Inflexible," as Chief of Staff to Admiral-of-the-Fleet Sir E. H. Seymour; H. E. Purey Cust to be Hydrographer of the Navy; A. E. M. Chatfield to "Albemarle." Commanders—H. C. J. Grant to "Iphigenia"; R. F. Parker to "Andromeda."

Royal Marine Light Infantry.—Colonel H. C. Money, C.B., to be Colonel-Commandant of the Plymouth Division. Colonel C. G. Brittan to be Colonel Second Commandant of Plymouth Division.

Admiral-of-the-Fleet Sir E. H. Seymour, G.C.B., O.M., G.C.V.O., has been appointed Special Representative of the Government at the Hudson-Fulton Celebrations in New York, and hoisted his flag (the Union at the main) on the 1st inst. on board the first-class armoured cruiser *Inflexible* at Portsmouth. The other ships composing the squadron under his orders are the first-class armoured cruisers *Drake* (flagship of Rear-Admiral F. T. Hamilton, C.V.O., Commanding Fifth Cruiser Squadron), *Duke of Edinburgh*, and *Black Prince*.

Rear-Admiral R. N. Ommanney hoisted his flag at Chatham on the 9th ult. on taking over charge of the Dockyard from Vice-Admiral G. A. Giffard, C.M.G., whose flag was struck the same evening.

Rear-Admiral Sir Colin R. Keppel, K.C.V.O., C.B., D.S.O., hoisted his flag on the 26th ult. at Chatham on board the first-class battleship *Albemarle* as Rear-Admiral in the Atlantic Fleet, in succession to Rear-Admiral W. B. Fisher, C.B.

The first-class battleship *Albion* was commissioned at Chatham on the 25th ult. by Captain C. H. Morgan as parent ship of a special service group of this class, which will be joined by the *Canopus* and *Ocean* on their being relieved in the Mediterranean.

Steam Trials.—Trial of the "Superb."—The new first-class battleship *Superb*, the fourth of the battleships of the *Dreadnought* type to be completed for the Navy, completed her trials in June with marked success, and her service work will be watched with interest, because of the high economy realised by her machinery on trial.

The *Superb*, like her immediate predecessors—the *Bellerophon*, built at Portsmouth Dockyard, and the *Temeraire*, constructed at Devonport Dockyard—is slightly larger than the *Dreadnought*, having a length between perpendiculars of 490 feet, a beam of 82 feet, and a mean load draught of 27 feet, at which the displacement is 18,600 tons. Her armament includes ten 12-inch guns—two in each of the five barbettes—and sixteen 4-inch guns. The machinery is of the Parsons steam turbine type, which on trial worked most satisfactorily. On the full-speed run of eight hours' duration, when the legend rate of 21 knots was exceeded by nearly half-a-mile per hour, the shaft power developed was 25,375-H.P. The coal consumption was only 1·38 lb. per H.P. per hour for all purposes. The steam economy of the turbines marked a record for this class of ship, agreeing with the results obtained in the Cunard liner *Mauretania*, which was also engined at the Wallsend Slipway and Engineering Company's works. The average coal consumption of preceding *Dreadnought* battleships and battleship-cruisers was 1·5 lb., so that the 1·38 lb. of the *Superb* is most favourable. On the thirty hours' trial at 70 per cent. of the full power, good results were also got, although the steam turbine works most economically at full power or in excess of full power, as then the range of expansion is greatest. The coal consumption of the *Superb* at this power was 1·62 lb. per H.P. per hour, as compared with an average of 1·7 lb. for the preceding ships of the class. The advantage of the turbine was also established by the short period required for the opening up of the machinery for inspection after the full-power tests. The time taken for this complete examination was under seven weeks—a further indication of the satisfactory workmanship established by the trial results. The ship was built by Sir W. G. Armstrong, Whitworth & Co., Ltd., who were represented on the trial by Mr. G. J. Carter. The whole of the propelling machinery was constructed by the Wallsend Slipway and Enginering Co., Ltd., and the trials were conducted on their behalf by the managing director, Mr. Andrew Laing, who has, by the development of this company's works, added them to our naval construction resources.

The Trials of the "Nubian."—The new destroyer *Nubian* has completed her official trials, and is now being completed for sea at the yard of Messrs. Thornycroft, at Woolston. Her performance has been satisfactory; the contract speed was exceeded and the consumption of oil fuel at full power was very low. The *Nubian* is the first of the 33-knot destroyers in last year's programme to carry out her official trial. The vessel is 280 feet long and 26½ feet in beam, and is of about 1,000 tons displacement. In spite of the extra load carried, the speed attained by the *Nubian* was hardly less than that attained by the *Tartar*, which is still the speediest of her class and the fastest in the world. She created a speed record in December, 1907, of 35·672 knots as a mean of six runs on the measured mile, while her highest speed was 37·037 knots, which was the fastest of a series of runs.

The new ocean-going 33-knot destroyer *Crusader*, built by Messrs. White, of East Cowes, has also completed her trials satisfactorily, having made, when running on the measured mile off the Maplins, 35·21 knots on one run, and during a six hours' continuous run averaged nearly 35 knots.—*Précis* from *The Times*.

Loss of Submarine "C11."—Want of space last month prevented our recording the disastrous collision between the submarine "C11," which was running at the time on the surface, and the s.s. *Eddystone*, on the night of the 14th of July off Cromer, which resulted in the foundering of the submarine and the loss of thirteen of her crew. She was commanded by Lieutenant C. Brodie, who, with Lieutenant Watkins and an able seaman, were the only three saved. It appears that the cruiser *Bonaventure,* with eight submarines and eight torpedo-boats, left the Humber on the Wednesday afternoon for the south. The vessels were off Happisburgh (or Haisboro') Light, about 20 miles from Cromer, steaming in line ahead, showing the regulation lights, when suddenly the *Eddystone* ran into the flotilla and scattered them. "C11" was struck by the *Eddystone,* and foundered in about 18 fathoms of water. The other submarines manœuvred to avoid the vessel, and in this attempt, "C16" and "C17" came into collision. The last-named boat was badly damaged, and taken in tow by the parent vessel *Bonaventure.* The place where the submarine sank was immediately buoyed, and every effort has since been made to raise her, efforts which it is hoped will yet prove successful. "C11" was built by Messrs. Vickers, Sons & Maxim at their Barrow yard, from which she was launched in 1906. She was the fortieth submarine built for the Navy. Her principal dimensions were: 150 feet in length, 13¼ feet in diameter, displacement 314 tons. She had engines of 600-H.P., and a speed on the surface of 14 knots, and motors of 300-H.P., with ten knots speed, when submerged. She was fitted with two torpedo tubes. The "C" class, to which the lost boat belonged, embody many improvements on those of the "B" pattern, such as the introduction of two propellers, as in the French submarines designed by M. Laubeuf. There were two periscopes provided, one each for the captain of the boat and a look-out man. The internal combustion motors were of the 16-cylinder petrol type. The conning tower was higher placed than those in the "B" class, and was possibly armoured, though on this point, as on many others concerning this latest type of war machine, the strictest secrecy has been maintained.

This is the third occasion upon which the British submarine flotilla has suffered from grievous disaster, attended by deplorable loss of life. On 18th March, 1904, when some of the earliest submarines were manœuvring in the neighbourhood of the Nab Lightship, outside Portsmouth, at the conclusion of the day's work, "A1" did not put in an appearance, and it was afterwards established beyond a doubt that she had been struck when submerged by the *Berwick Castle,* one of the Union Castle mail steamers, and her hull damaged so seriously that she foundered. Two officers and all the crew of the submarine were drowned. On 8th June, 1905, "A8" went down just outside Plymouth Breakwater with 18 men on board, four only of whom were saved. The evidence showed that in the case of this boat she was gradually settling down by the bow through water entering at a leaky rivet into one of the tanks at the fore end, and that she suddenly plunged into the water bow first with her conning tower hatch open. Her buoyancy was thus lost, and she sank, only those who were outside being saved. A third boat went to the bottom in October, 1905, while taking in water ballast, but in this case the officers and crew were saved. Other mishaps which have occurred have been, as a rule, due to explosions of gas. The worst accident of this description occurred to "A5" a short time before the loss of "A8." The explosion was due to a leaky gasolene pump, and several members of the crew were killed or afterwards died of their injuries. The last accident of this kind took place on 13th June, 1907, on board "C8," when Lieutenant Hart died of the injuries he received, and two other men were badly burnt.—*Précis* from *Times.*

Home.

Hydrographer's Report for 1908.—The Report on Admiralty Surveys for the year 1908, by the Hydrographer, has been published as a Parliamentary Paper (Cd. 4642). In his report, Admiral Mostyn Field states that 11 ships were engaged in hydrographical surveys during the year, in which were employed 84 officers, of whom 59 were surveying officers, the crews of the vessels numbering 811. A total of 368 rocks and shoals dangerous to navigation were reported. Of these, ten were discovered by vessels striking on them; 29 were reported by surveying ships; 11 by other of His Majesty's ships; 38 by various British and foreign authorities; and 280 by Colonial and foreign Governments. In the same period 26 previously reported dangers have been expunged from the charts. A length of 778 miles of coast line was charted, and an area of 8,581 square miles sounded over, by the surveying vessels, which were kept fully employed during the year. In addition to this, plans and sketch surveys of places visited were received from officers of other ships of the fleet. An important feature of the year's work was the Indian marine survey, by which 254 miles of coast line were charted, and an area of 4,458 miles sounded over; two vessels of the Royal Indian Marine, with 188 officers and men, being engaged in this duty.

The publications of the department during 1908 included 67 navigation charts, and 24 plates were improved by the addition of 39 new plans. Four hundred and ninety plates were improved by large corrections and additions, while 7,680 corrections were made to the plates by the engraver. A total of 135,003 charts received minor corrections in manuscript. The number of charts printed for the requirements of the Royal Navy, for Government departments, and to meet the demand of the general public amounted to 434,946.

Australia. *Remarks on Colonel Foster's Articles on "The Defence of Australia," by Captain W. R. Cresswell, C.M.G., R.N., Director, Commonwealth Naval Forces. Laid by Order before the Commonwealth Parliament* :—

The Hon. the Minister of State for Defence.

In accordance with your request for my views on the Defence articles published in the Press, I submit the following:—

In two articles published in the *Argus*, Colonel Foster, Director of Military Studies, Sydney University, has given his views on the defence of Australia.

Purpose of Colonel Foster's Articles.

Colonel Foster's opinions are published at the time that Parliament is engaged in considering the Defence Bill. It is fair to assume that he has done so with the perfectly justifiable purpose of influencing with the prestige of his name and military acquirements the trend of our defence legislation. His articles need only be read for it to be seen at once that they strike at the root basis of the principles to which the new defence scheme is intended to give effect. As the fundamental pre-supposition upon which all defence doctrines depend is naval, the articles naturally invite the attention of a naval officer.

Australia.

Colonel Foster's Point of View.

Before proceeding to criticise the defence plans he advocates, it will be well to discuss the points of view from which Colonel Foster on the one side, and the Australian Government on the other, regard the defence of Australia, and its place in the general defence of the Empire.

We will take, first, that which appears to be the basis upon which the Director of Military Studies to the Sydney University rears his superstructure of defence; and, secondly, that which, from the Australian point of view, renders necessary the radical change in our defence policy.

Colonel Foster's policy is based on the assumption of a supreme Navy—supreme in every sea, and requiring only that "the land forces must be numerous enough to compel the invader to come with a large force if he is to succeed. If this be the case, naval action will ensure that this invasionary force cannot reach Australia. Her defence rests, therefore, on the interaction of two forces—the naval force (the Imperial Navy), which, though small hostile expeditions may evade it, can certainly stop large ones; and the military force, which can make the success of the small expeditions so impossible that no wise enemy will launch them at all''; and Colonel Foster then "proceeds to consider the defence required for this latter purpose.''

Later, Colonel Foster says: "In considering these possibilities, we cannot fail to see how little purely local defence is required to guard Australia from aggression,'' because (it is intended we shall infer) of a supreme Navy—supreme in all the seas of the world. "Command of the sea,'' he tells us, "confers on Great Britain the power to move forces to any part of the world, in order to attack and embarrass her foes. This has been exhibited in her past history, and will form her most ready means of defending her daughter dominions in the future. It was never shown in such a scale as in the South African war, where 250,000 men were moved 6,000 miles oversea at an average rate of 1,000 a day—a rate not exceeded by the Russians over the Siberian Railway.''

The extracts have been copious—perhaps unnecessarily so—for Colonel Foster's point of view implies the existence of *a supreme Navy,* supreme even around distant Australia. Also, as preparation for efficient defence is a question not of days, but of years, we may fairly credit Colonel Foster with the postulate that within reasonable limits of time, a length of time capable of being influenced or governed by present legislation, this condition of world-sea supremacy is immutable, our paramountcy is to remain at the same relatively high standard above all rivals.

The Australian Government's Point of View.

Now, we could wish—and who with more earnestness than ourselves — that such were indeed the case. What happier condition than one of such assured, unquestioned, and continued security? But unfortunately the world, the nations that inhabit it, and the relative strength of the great Powers, are neither unchangeable nor unchanging.

With many—and we cannot but honour the sentiment—it is a heresy to doubt the paramount supremacy of the Mother Country's great Navy over all and every conceivable enemy or combination with which it may be faced, or its ability to shelter us from aggression either now or in the years to come. Yet but a few weeks since that distinguished Imperialist, the late Governor-General of the Commonwealth (Lord Northcote), bade us, "as men of common-sense, to remember that there were Powers of greater population who were treading fast on the heels of Great Britain, and that there were other Powers nearer our shores."

Again, we have been recently reminded by English writers on defence that the time is fast approaching when the existence of Australia "will depend on the goodwill of America and the politeness of Japan"—a comment based on a simple calculation of the growth of the world's Navies.

What, then, are the changes of which, as "men of common-sense," our late Governor-General would have us take note? All defence must depend upon the power of foreign Navies. If there were no foreign Navies, possibly one gunboat or cruiser would suffice to ensure unchallengeable supremacy. If there were but weak foreign Navies, a moderate but relatively strong Navy would be required to ensure supremacy. With the growth in strength of foreign Navies, the standard of force to meet them must be raised. There is no law of eternal friendship or indissoluble alliance. The friend of to-day may be the foe of to-morrow. With the whole world building Navies, the Empire's ability to meet them all must gradually fall to ability to meet probable or possible combinations. When the individual Powers of a probable or even possible combination are equal to, if not greater than, our own, and they are determined to construct Navies to the limit of their capabilities and resources, it is not the man of common-sense alone who sees this and understands what it may entail; it is only the wilfully blind who ignore it. Seeing that foreign nations are already treading fast on our heels, it is time, indeed, to take a long farewell to Colonel Foster's comfortable picture of our Navy, supreme over all possible combinations for all time.

The Truth about Sea Supremacy.

Naval supremacy must ever be the *sine qua non* of the Empire, but it is no certain, stable, and eternal physical fact as Colonel Foster's views would have us believe it. It was not so regarded in the past. Then it was regarded as an end in view, the purpose to be achieved and secured, not as something already ours before even war has begun, something "'grateful and comforting" to rest in the shade under, but as demanding the whole earnest, unsparing, and combined effort of the whole nation throughout its every part, wherever it might be, to achieve.

India, the West Indies, Canada, each and all did their utmost on sea and land. In our last sea war, sea supremacy was achieved only after a thirteen years' struggle, and made absolute at Trafalgar. To-day, with a far greater Empire and more widely scattered dominions, with the heart of the Empire dependent on oversea for food to a degree never before known, with foreign Navies growing in strength and numbers with such rapidity, and unhampered naval power more vital to us than ever, it is suggested that we sit down comfortably and contemplate how little we need do for our local defence, and it is suggested we continue to take advantage to the fullest of sea defences paid for by our heavily-taxed brothers in Great Britain.

Growing Naval Ability of Foreign Powers and its Consequences.

The numbers of battleships, cruisers, and torpedo craft possessed by foreign Powers are set out in *Brassey, Jane, Clowes*, or other *Naval*

Australia.

Annuals. One or two facts of marked importance may be cited. To-day Great Britain's supremacy is commanding, but the *Dreadnought's* launch marks an epoch, and every year that passes since sees the value of the older type, on which British supremacy mainly rests to-day, sensibly diminishing. Again, the rate of completion of battleships by foreign Powers has advanced at a pace almost, if not quite, equalling our own. The Japanese average rate of construction has been only two years to the British three. Germany has authoritatively declared her ability to build as fast as Great Britain. In 1911 Germany will possess but one less *Dreadnought* than Great Britain. In the same year, Japan will have one, or perhaps two, *Dreadnoughts* less than Great Britain. The superiority in older vessels, which is ours now, is decreasing annually, both in their individual battle value and numbers. Supremacy depends primarily in modern naval warfare not upon the number but upon the class of vessel.

That the present political circumstances in Europe compel the concentration of all the British battleships in home waters is a fact we are all familiar with. Fifteen years ago this, if prophesied, would have been laughed at. There is nothing on the political horizon to indicate a relaxation of that concentration. Unfortunately, the political situation points to its being intensified rather than eased. It is plain that a concentration, imperative even in peace, will not be less so in war. The simple question whether the absence of Australian effort under Colonel Foster's reliance upon a supreme Navy, or local preparation, made as effective as we can afford, will best aid the Empire in the face of that concentration, carries its own reply. Colonel Foster advocates a defence for our shores so weak as to require a naval force to be withdrawn from the home concentration to stave off any aggressor on any but the smallest scale, yet obviously preoccupation by the Mother Country's Navy in Europe will not permit of a diversion of fleet strength to defend us against an hostile alliance including a Pacific Power.

The Respective Values of the Two Systems to the Nation.

What would be the respective values of the two systems to the nation —the British Empire—at war? That is the real test of merit. Colonel Foster's, the avowedly Imperial, or our present defence schemes, avowedly Australian? It is a paradox, but each will be found to merit the name of the other rather than its own.

To an Admiralty charged with the conduct of a great naval war there could be no more weakening distraction than responsibility for the safety of great interests at a great distance. If a raiding expedition escapes, there is first the doubt as to its objective. If bound to Australia, it may be weeks before this even is determined. Squadrons detached in pursuit will not only weaken sea force, possibly strained to the utmost to do all that is required of it, but weaken it for a considerable time. For all the long voyage out and back, the squadrons detached to our relief are "dead stock." They will meet no enemy at sea against whom, by striking a blow, there would be gain in the war balance. For all that time they could be written off as "war force." This is the position under Colonel Foster's professedly Imperial system. Distance, it must be remembered, is ever a main controlling factor. To carry on war operations at the antipodes from the heart of the Empire is like lifting a weight at the end of a pole. The leverage is great, and against the lifter. In proportion to the weight of

Australia.

war, the effort it involves is prodigious. The avowedly Australian scheme, on the other hand, is intended to render us so strong that there may be little concern for our safety for some time ahead. The relief to the Admiralty or its officers needs no statement. The immense gain to the Empire by rendering unnecessary the withdrawal of naval force to our aid in the first grave emergency may be practically measured by the strength of the expedition which, under Colonel Foster's plan, would be threshing around the world for long weeks coming to our aid. There is no doubt as to which scheme would be favoured by the Admiralty or officer responsible for the naval conduct of a war. Under the new scheme, it would be easier to carry out the "standardisation," the production of arms and ammunition, of "equipment and military stores of all sorts," as Colonel Foster suggests. Under the proposals for national training, and under these proposals alone, can Australia then "be a base of supplies of stores, and of reinforcements for the Imperial forces engaged in her neighbourhood."

Seeing, then, that the new defence scheme, the greater, includes all that Colonel Foster's scheme, the less, provides for, it is difficult to account for his appearance on the side of the old system, which the march of events renders it imperative to change.

(*To be continued.*)

France. The following are the principal promotions and appointments which have been made.

Rear-Admirals—L. V. Marin-Darbel to be Chief of the Naval General Staff; L. J. Berryer to Command of the 3rd Division of the Mediterranean Squadron; L. H. Dufaure de Lajarte to be Chief of the Staff of the 5th *Arrondissement Maritime* (Toulon); H. De Faubournet de Monferrand to be Member of the Superior Council of the Navy and President of the Commission for Trial of Ships; J. M. Nény to be Chief of the Department of Commissioned Ships. Capitaine de Vaisseau—L. M. Laporte to "Léon-Gambetta." Capitaines de Frégate—A. L. Champanhac, E. M. Ronin to be Capitaines de Vaisseau; L. R. Exelmans to "Chamois," and Command of School of Pilotage; P. M. Barthes to "Obusier," and Command of Torpedo Flotilla of the Squadron of the North; C. M. Lainé to "Marigot," and of the Senegal Naval Division.—*Journal Officiel de la République Française.*

Vice-Admiral de Marolles hoisted his flag and took up his duties as Maritime Prefect at Brest in succession to Vice-Admiral Boué de Lapeyrère, the new Minister of Marine, on the 10th ult. The new Prefect is 58 years old, and as a captain he distinguished himself a good deal during the Boxer troubles in 1900, when he served as Chief of the Staff of the International flying column which, under the command of Vice-Admiral Sir E. H. Seymour, attempted to reach Pekin for the rescue of the Legations. In his despatch Sir E. Seymour drew special attention to the valuable assistance he received from Captain De Marolles, and to the high services he rendered during the expedition. Captain De Marolles was at that time in command of the first-class cruiser *D'Entrecasteaux.*

Rear-Admiral Dufaure de Lajarte, the new Chief of the General Staff of the Navy, struck his flag on board the *Bouvet* at Toulon on the 15th ult., and took over his duties at the Ministry of Marine on the

23rd ult. Rear-Admiral Berryer, his successor in command of the 3rd Division of the Mediterranean Fleet, hoisted his flag on the 16th ult. on board the first-class battleship *Bouvet* at Toulon.

The 2nd Division of the Mediterranean Fleet, under the command of Rear-Admiral Le Pord, consisting of the first-class battleships *Justice* (flagship of Rear-Admiral Le Pord), *Liberté*, and *Verité*, arrived at Brest on the 11th ult. at the conclusion of the manœuvres, and left on the 5th inst. for New York, where they will represent the French nation at the Hudson-Fulton celebrations. The squadron has been ordered to maintain a speed of 16 knots on the passage across to America.

New Ships.—Work on the new first-class battleship *Danton* is being actively pushed forward at Brest, and the time lost owing to the failure to launch her the first time the attempt was made will not delay her completion at the date originally fixed, in the autumn of next year. Her armour belt was all put in position in fourteen days, and her military masts and her funnels have also been put in place. M. Louis, the head of the constructor's department at the dockyard, has accompanied the new Minister of Marine to Paris, where he will continue to serve under his old Chief at the Ministry of Marine, and he may be trusted to see that there is no more unnecessary delay in completing these fine ships. The same energy in pushing forward the work on a sister ship, the *Diderot*, is being displayed at the yard of the Société des Chantiers et Ateliers de St. Nazaire (Penhoet), her armour, funnels, etc., being already all in place.

A Submarine Salvage Boat.—A vessel recently completed for the French Navy is the submarine salvage boat *Vulcain*, which was constructed with considerable secrecy as to her details and her ultimate service. Her dimensions are: Length, 43 metres (141·078 feet) over all, and 40 metres (131·235 feet) between perpendiculars; extreme beam, 7·72 metres (25·121 feet); draught, just over 3 metres (9·843 feet); her displacement is about 330 tons, and her engines of 450-H.P. give her a speed between 11 and 12 knots. Her hull is of galvanized steel plates, stronger than is usual in vessels of her size. It has fore and aft several water-tight compartments. A double bottom extends all along the vessel, except beneath the machinery space. The boiler is of ordinary cylindrical type with three furnaces, and the engine is triple expansion. Besides the usual auxiliaries there is a large and powerful pump, driven by an independent two-cylinder engine. All the openings on the deck can be closed watertight. The wheel-house consists of a kind of metal box supported at its four corners and raised some 16 inches from the deck; hence the water may cover the deck from end to end without gaining admission.

In salving submerged bodies, the ordinary winches will be employed if the weight is not great. The vessel will be brought over the sunken submarine, and chains running over the guide pulleys fore and aft will be passed round or attached to the wreck. The winches, or if necessary the capstan, will then be employed to pull in the chains and raise the submarine till it lies below the salving vessel at a convenient depth, when the latter will steam with its load to the nearest place or dock where salvage can be completed. If the load is too great for this method, chains will be made fast to the lost submarine. The *Vulcain* will then take in water ballast and sink to the lowest safe level, and then, when the slack on the chains has been taken up, she will pump out the ballast and slowly rise, lifting the submarine slightly from the bottom. She will then steam away to some shallower place, let the boat down on the bottom, and repeat the operation, and so on until the wreck can be brought to a safe place. Use, no doubt, will also be made of the large pumps on board to empty the submerged vessel.

Relative Cost of Shipbuilding.—It has been stated that the battleships of the *Queen* class, built in England in 1902, having a displacement of 15,000 tons, cost 2,550 francs (£102) a ton, and that this is 1,100 francs (£44) a ton less than the cost per ton of the same class of ship in France. This statement, which was published in the report of M. Brousse, has been proved to be incorrect; nevertheless, it has served a good purpose—that of calling public attention to the relative cost of construction in the different Navies of the world.

It was said that England could build three battleships for the price of two built in France; but not only can England not build three for two, she cannot even build four for three, or even five for four. In comparing the price of construction in different countries, critics have been contented with the simple calculation of extracting the cost from the Budget for such or such a ship and dividing this by the number of tons of the vessel. This plan, though easy and quick, is not a fair or an accurate one, as the different method of drawing up the Budget has to be considered. Does the cost include, besides hull, machinery, and armament, all stores and coal, etc., complete on board and the vessel ready for commission?

Let us compare the estimates for the English battleship *Superb*, ordered on the 6th February, 1907, with that of the *Voltaire*, ordered on 26th December, 1906. These two vessels are as nearly contemporaneous as possible, and both have been built by contract in private yards. Their dimensions are as follows:—

——	*Superb.*	*Voltaire.*
Length	490 feet.	145 metres (475 feet)
Beam	82 ,,	25·8 ,, (84 ,,)
Draught	27 ,,	8·26 ,, (27 ,,)
Displacement	18,600 tons.	18,318 tons.
H.P.	23,000	22,500
Speed	20·7 to 21 knots.	19—20 knots.

The details of prices given in the Budgets of the two countries are as follows:—

Hull	20,548,675 francs.	23,250,000 francs.
Engines	7,141,500 ,,	8,370,000 ,,
Turrets, gun mountings ...	10,509,575 ,,	12,663,000 ,,
Guns (exclusive of ammunition	2,907,500 ,,	3,870,000 ,,
Various expenses	805,975 ,,	189,300 ,,
Totals	41,913,225 (£1,676,529)	48,342,300 (£1,933,692)

France.

To the cost of the *Voltaire*, however, must be added expenses incurred in the arsenal, which amount to 870,800 francs, raising her total cost to 49,213,100 francs. From these figures the price per ton works out as follows: *Superb*, 2,253 francs (£90 2s. 6d.); *Voltaire*, 2,686 francs (£107 9s. 2d.); or a difference in favour of the English ship of 433 francs (£17 6s. 8d.) per ton. It is true that the general total which appears in our Budget is 54,247,544 francs, so that in round numbers there is a difference of five million francs in the cost of the two ships; but the following extra expenses charged with us are not included in the English estimates, namely: trials of armour plates, 521,000 francs; munitions, 4,000,000 francs; various, 200,000 francs. It appears, therefore, from these figures that comparisons between the costs of ships in England and France have always been inaccurate, because the expenses of trials and cost of munitions are not included in the English Budget. If we also take into consideration that the cost of materials are higher in France (steel, for instance, costing 10 to 15 per cent. more) and the average price of coal being 15 francs to 11 francs (12s. to 8s. 9½d.), it must be acknowledged that French constructors manage very well if their total estimates are only about 16 or 17 per cent. higher than in Great Britain.—*Le Yacht*, *La Vie Maritime*, *Le Temps* and *Army and Navy Journal*.

Germany. The following are the principal promotions and appointments which have been made:—Kapitäns zur See—Bachmann, von Krosigk, von Dambrowski, to be Rear-Admirals; Schröder to be Commandant of Heligoland. Kapitäns zur See—Bossart to "Kaiser Barbarossa"; Schultz to "Lothringen"; Gädeke to "Westphalen"; Wilbrandt to "Brauschweig"; Funke to "Württemberg."—*Marine Verordnungsblatt*.

Admiral H.R.H. Prince Henry of Prussia is to resign his command of the High Sea Fleet, which he has held for the last three years, at the conclusion of the manœuvres, and to be promoted to the rank of Grand Admiral. This rank was established by the Kaiser some four years ago, Admiral Koester, then in command of the High Sea Fleet, being promoted to it, presumably as an equivalent to our rank of Admiral-of-the-Fleet, so as to have officers, if the occasion arises, who will take equal precedence with the highest in our own Navy.

Grand Admiral von Koester is proceeding to the United States as the Kaiser's representative at the Hudson-Fulton celebrations, a small squadron, consisting of the second-class cruisers *Bremen*, *Victoria*, and *Freya*, having also been despatched to New York to represent the German Navy; as none of these ships is considered of sufficient importance to hoist a Grand Admiral's flag for the cruise, Grand Admiral von Koester is proceeding to New York by one of the German mail steamers.

The "Nassau" and "Westphalen."—The armament and dimensions of the four ships of the *Nassau* class are now known. Their dimensions are as follows:—Length, 451 feet; beam, 88 feet; draught, 26 feet 3 inches, on a displacement of about 18,500 tons. The armament consists of twelve

11-inch guns in six double turrets, one forward, one aft, and two on each beam; twelve 5·9-inch Q.F. guns and sixteen 18-pounder Q.F. guns. Her three triple-expansion engines are to develop 20,000-I.H.P., giving a speed of 19 knots, which it is fully expected will be exceeded. The normal coal supply is 950 tons, but 2,700 tons can be carried.

Both the *Nassau* and *Westphalen* are now practically ready for their trials, and those of the *Nassau*, which has been constructed at the Imperial dockyard, Wilhelmshaven, are expected to commence this month. Those of the *Westphalen*, however, must be delayed quite another month, as the attempt to bring her down the Weser from Bremen, where she has been constructed, has temporarily failed, owing to there being an insufficient depth of water in the river, in spite of every effort having been made by the use of pontoons, etc., to lighten her draught. The attempt has accordingly been put off until the next high spring tides, and in the meantime dredgers are being employed to deepen the waterway.

The Estimates for 1909.—The Estimates for 1909 amount to 400,471,212 marks (£20,023,560 12s.), as against 339,233,724 marks (£16,961,686 4s.) voted for 1908, showing an increase of 61,237,488 marks (£3,061,874 8s.). The following are the principal items:—

ORDINARY PERMANENT ESTIMATES.

	Proposed for 1909.			Voted, 1908.	
	Marks.	£	s.	£	s.
Imperial Ministry of Marine and Naval Cabinet	2,167,630 =	(108,381	10)	101,719	15
Naval Headquarter Staff	316,340	(15,817	0)	15,707	10
Observatories, etc.	387,384	(19,369	4)	18,893	4
Station Accounts Department	766,018	(38,300	18)	34,228	10
Legal Department	192,375	(9,618	15)	9,133	0
Chaplains' Department and Garrison Schools	180,083	(9,004	3)	8,319	13
Pay of Officers and Men	32,840,378	(1,642,018	18)	1,566,159	15
Maintenance of Fleet in Commission	39,781,806	(1,989,090	6)	1,821,350	0
Allowances for Officers and Men	3,385,724	(169,286	4)	115,616	14
Clothing	429,138	(21,456	18)	21,825	19
Barrack and Garrison Administration, etc. ...	1,189,306	(59,465	6)	57,150	9
Barrack and Garrison Construction	751,879	(37,593	19)	36,545	9
Lodging Allowance	2,887,341	(144,367	1)	135,834	14
Medical Department	2,751,830	(137,591	10)	124,517	8
Travelling, Transport, and Freight Charges ...	3,636,000	(181,800	0)	157,389	0
Training Establishments	553,882	(27,694	2)	24,547	18
Maintenance of Fleet and Dockyards ...	34,202,280	(1,710,114	0)	1,626,658	7
Ordnance, Arms, and Fortification	13,972,607	(698,630	7)	641,051	8
Accountant-General's Department	1,036,658	(51,832	18)	48,609	10
Pilotage and Surveying	790,474	(39,523	14)	37,809	15
Miscellaneous Expenses	1,678,601	(83,930	1)	81,217	1
Administration of Kiau-Chau Protectorate ...	146,070	(7,303	10)	5,768	15
Total	144,043,804	(7,202,190	4)	6,690,053	14

Germany.

SPECIAL ORDINARY ESTIMATES.

Shipbuilding Programme for 1909.

For the construction of the following ships :—

	Marks.	£	s.
The first-class battle-ship "Nassau" (Ersatz "Bayern)," 4th and final Vote	4,870,000	(243,500	0)
,, ,, ,, "Westfalen" (Ersatz "Sachsen)," 4th and final Vote	4,870,000	(243,500	0)
The first-class armoured cruiser "Blücher," 4th and final Vote	4,500,000	(225,000	0)
The first-class battle-ship "Rheinland" (Ersatz "Wurttemberg"), 3rd Vote	5,800,000	(290,000	0)
,, ,, ,, Ersatz "Baden," 3rd Vote ...	5,800,000	(290,000	0)
First-class armoured cruiser "F," 3rd Vote	7,500,000	(375,000	0)
Third-class cruiser "Colberg" (Ersatz "Greif"), 3rd Vote...	1,500,000	(75,000	0)
,, ,, Ersatz "Jagd," 3rd and final Vote ...	1,500,000	(75,000	0)
First-class battle-ship Ersatz "Oldenburg," 2nd Vote ...	10,500,000	(525,000	0)
,, ,, Ersatz "Siegfried," 2nd Vote... ...	10,500,000	(525,000	0)
,, ,, Ersatz "Beowulf," 2nd Vote... ...	10,500,000	(525,000	0)
,, cruiser "G," 2nd Vote	11,000,000	(550,000	0)
Third-class ,, Ersatz "Schwalbe," 2nd Vote	2,500,000	(125,000	0)
,, ,, Ersatz "Sperber," 2nd Vote	2,500,000	(125,000	0)
River-Gunboat C, 2nd and final Vote	300,000	(15,000	0)
First-class battle-ship Ersatz "Frithjof," 1st Vote	5,500,000	(275,000	0)
,, ,, Ersatz "Hildebrand," 1st Vote ...	5,500,000	(275,000	0)
,, ,, Ersatz "Heimdall," 1st Vote	5,500,000	(275,000	0)
First-class armoured cruiser "H," 1st Vote	5,000,000	(250,000	0)
Third-class cruiser Ersatz "Bussard," 1st Vote	2,500,000	(125,000	0)
,, ,, Ersatz "Falke," 1st Vote	2,500,000	(125,000	0)
Tender for Torpedo-boat Flotilla, 1st Vote	200,000	(10,000	0)
Flotilla of Torpedo Boats, 1st Vote	10,000,000	(500,000	0)
,, ,, ,, 2nd and final Vote	9,100,000	(455,000	0)
Construction of and experiments with Submarines... ...	10,000,000	(500,000	0)
Total	139,940,000	(6,997,000	0)
For the Gun and Torpedo Armaments of New Ships, and Mines...	79,820,000	(3,991,000	0)
Miscellaneous Expenditure : Dockyards, etc.	11,723,363	(586,168	3)
	231,483,363	(11,574,168	3)
From which has to be deducted, credited in the Extraordinary Estimates	84,980,000	(4,249,000	0)
Leaving Total	146,503,363	(11,574,168	3)

Summary.

	1909.			1908.		Increase, 1909.	
	Marks.	£	s.	£	s.	£	s.
Ordinary Permanent Estimates	144,043,804=	(7,202,190	4)	6,690,053	14	(512,136	10)
Shipbuilding, Armament, etc.	146,503,363	(7,325,168	3)	5,964,875	0	(1,360,293	3)
Extraordinary Expenditure ...	109,924,045	(5,496,202	5)	4,306,757	10	(1,189,444	15)
Total	400,471,212	(20,023,560	12)	16,961,686	4	(3,061,874	8)

Germany.

The Personnel of the Fleet: The Officers' Corps.—The following are the numbers of the officers of different ranks on the Active List of the Fleet: 4 Admirals, 8 Vice-Admirals, 17 Rear-Admirals, 80 Captains, 189 Frigate or Corvette-Captains, 434 Captain-Lieutenants, 1,003 Lieutenants, 428 Midshipmen, and 185 Naval Cadets. There is thus an increase in the present year of 1 Vice-Admiral, 1 Rear-Admiral, 5 Captains, 11 Frigate or Corvette-Captains, 31 Captain-Lieutenants, 51 Lieutenants, and 30 Midshipmen, or a total increase of 130 officers of all ranks. There are, further, 1 retired Rear-Admiral, 11 retired Captains, 22 retired Frigate and Corvette-Captains, and 6 retired Captain-Lieutenants employed on special duties, while 51 Captain-Lieutenants and 91 Lieutenants are employed in ordnance and torpedo duties at the various dockyards and coast stations.

The staff of the Marine battalions is as follows: 1 Colonel (inspector of Marine Infantry, with the rank of Regimental Commander), 2 Battalion Commanders, 13 Captains, 14 First-Lieutenants, and 22 Lieutenants.

The Marine Field Artillery have 2 Captains, 1 First-Lieutenant, and 5 Lieutenants, and the Pioneer detachment 1 Major, 1 Captain, and 1 First-Lieutenant.

The Engineering Department consists of 11 Chief Engineers and Senior Staff Engineers, 66 Staff Engineers, 110 Senior Engineers and 176 Engineers, being an increase of 52 over the numbers of last year.

The Medical Department consists of 1 Medical Director-General (with rank as Rear-Admiral) and 2 Inspector-Generals (with rank as Captain), 59 Senior Staff-Surgeons, 88 Staff-Surgeons, 54 Surgeons, and 54 Assistant-Surgeons.

In the Accountant Department are 40 Staff-Paymasters and 167 Senior Paymasters and Paymasters.

Seamen, Stokers, etc.

The Seamen's Division number 147 Chief Warrant Officers, 219 Warrant Officers, and 19,337 Petty Officers and Seamen, with 96 Boys' Instructors and 1,554 Boys, a total of 21,353, showing an increase of 7 Chief Warrant Officers, 10 Warrant Officers, and 797 Petty Officers and Seamen.

The Dockyard Divisions number 365 Chief Warrant Officers, 729 Warrant Officers, and 14,264 Petty Officers and men, of whom 978 Chief and Warrant Officers and 11,727 Petty Officers and men form the engine-room *personnel* of the Fleet, which shows an increase of 48 Chief and Warrant Officers and 878 Petty Officers and men over last year, with a total increase in the divisions of 53 Chief and Warrant Officers and 1,015 Petty Officers and men.

The Torpedo Divisions number 117 Chief Warrant Officers, 234 Warrant Officers, and 6,809 Petty Officers and men, of whom 68 Chief and Warrant Officers and 2,917 Petty Officers and men are of the seamen class, while 283 Chief and Warrant Officers and 3,892 Petty Officers and men are of the engineering branch. There is an increase in the divisions of 24 Chief and Warrant Officers and 713 Petty Officers and men of the engineering branch, and of 8 Chief and Warrant Officers and 300 Petty Officers and men of the seamen branch, a total increase in both branches of 32 Chief and Warrant Officers and 1,013 Petty Officers and men.

The Seamen Artillery Division and Mining Detachment numbers 27 Chief Warrant Officers, 54 Warrant Officers, and 3,592 Petty Officers and men, of whom 13 Chief Warrant Officers, 25 Warrant Officers, and 728

Germany.

Petty Officers and men belong to the Mining Detachment. There is an increase of 2 Chief Warrant Officers, 5 Warrant Officers, and 239 Petty Officers and men over last year, of which increase 1 Chief Warrant Officer, 2 Warrant Officers, and 51 Petty Officers and men are on the staff of the mine detachment.

The Marine Infantry numbers 210 non-commissioned officers and 1,153 men, being the same strength as last year.

The Sick-Bay Staff consists of 540 Petty Officers and men of various grades, being an increase of 34 over last year, and there are 363 ships' stewards, writers, and assistants.

The sum total of all ranks is 53,769, being an increase of 3,446 over last year.

Personnel.	Officers.	Doctors.	Non-commissioned Officers and Seamen.				Total all Ranks. 1909.	Increase compared with 1908.
			Warrant Officers.	Pay Officers.	Seamen.	Boys.		
Naval Officers	1,778	—	—	—	–	—	1,778	100
Junior Executive Officers...	—	—	—	428	185	—	613	30
Engineer Officers	366	—	—	—	—	—	366	36
Seamen, Boys, Dockyard and Torpedo Divisions...	—	—	1,811	9,172	31,238	1,650	43,871	2.910
Seamen Artillery	—	—	81	498	3,114	—	3,693	246
Marine Infantry	52	—	—	210	1,153	—	1,415	—
Personnel of the Clothing Department ..	—	—	—	27	150	—	177	—
Medical Department ...	—	260	—	229	311	—	800	47
Artillery Administration ...	88	—	120	66	—	—	274	19
Torpedo *Personnel* (Technical and Administrative)	58	—	137	55	—	—	250	29
Mining *Personnel* (Technical and Administrative)	29	—	44	68	—	—	141	12
Accountant Department ...	—	—	87	222	54	—	363	17
Surveying " ...	—	—	28	—	—	—	28	—
Total	2,371	260	2,308	10,975	36,205	1,650	53,769	3.446
	2,631		51,138					

—*Etat für die verwaltung der Kaiserlichen Marine auf das Rechnungsjahr*, 1909.

Recruiting for the Navy in 1909.—Among the young men of the 1908 class liable for service, 10,374 have been incorporated in the fleet, and 1,801 in the Naval *Ersatz* Reserve. In addition, there have been 3,839 voluntary enlistments in the fleet, of which 593 have been One-Year Volunteers.

From an article in the *Wiesbadener Zeitung*, reviewing the growth of the German Navy, it appears that the strength of its *personnel* has been more than doubled since 1898, from 25,015 to 50,536. The corps of officers grew from 1,229 to 2,667, while the warrant and petty officers now number 2,079 and 9,429 respectively.

MILITARY NOTES.

Home. The following are the principal appointments which have been made :—

Lieut.-General—Sir H. F. Grant, G.C.V.O., K.C.B., to be Lieutenant of the Tower of London.

Colonels—G. K. Scott-Moncrieff, C.B., C.I.E., to be Chief Engineer, Aldershot Command, with temporary rank of Brigadier-General; C. F. N. Macready, C.B., to Command of 2nd Infantry Brigade (Aldershot Command), with temporary rank as Brigadier-General; T. P. Battersby, A.O.D., to be Inspector of Equipment and Ordnance Stores with temporary rank of Brigadier-General.

Battle Honours.—It was announced in Army Orders of 1st July that the King has been pleased to approve of the following regiments being permitted, in recognition of services rendered during the operations at Tangier in the years 1662 to 1680, at Gibraltar in the years 1704 and 1705, and at the battle of Warburg on 31st July, 1760, to bear upon their colours or appointments the distinctions (with dates where specified) as follows :—

> Royal Horse Guards (The Blues), 1st (King's) Dragoon Guards, 2nd Dragoon Guards (Queen's Bays), 3rd (Prince of Wales's) Dragoon Guards, 6th Dragoon Guards (Carabiniers), 7th (Princess Royal's) Dragoon Guards—Warburg.
>
> 1st (Royal) Dragoons—Warburg; Tangier, 1662-80.
>
> 2nd Dragoons (Royal Scots Greys), 6th (Inniskilling) Dragoons, 7th (Queen's Own) Hussars, 10th (Prince of Wales's Own) Royal Hussars, 11th (Prince Albert's Own) Hussars—Warburg.
>
> Grenadier Guards, Coldstream Guards—Tangier, 1680: Gibraltar, 1704-5.
>
> Royal Scots (Lothian Regiment)—Tangier, 1680.
>
> Queen's (Royal West Surrey Regiment)—Tangier, 1662-80.
>
> King's Own (Royal Lancaster Regiment), Prince Albert's (Somersetshire Light Infantry), East Lancashire Regiment, East Surrey Regiment, Duke of Cornwall's Light Infantry, Royal Sussex Regiment—Gibraltar, 1704-5.

The King has also been pleased to approve of the dates specified in each case being added to the honorary distinction, already awarded for the defence of Gibraltar in the years 1779 to 1783, to the undermentioned regiments :—

> Suffolk Regiment, Dorsetshire Regiment, Essex Regiment, Northampton Regiment—1779-83.
>
> Highland Light Infantry—1780-83.

The following information was issued from the War Office, in reference to the above announcement :—

Home.

With this month's Army Orders is published a list of battle honours that have recently been sanctioned by the King for various cavalry and infantry regiments. The honours referred to commemorate respectively the arduous campaigns imposed on the Army by the possession of Tangier in the reign of King Charles II.; the capture and first defence of Gibraltar in the reign of Queen Anne; and the brilliant cavalry action of Warburg during the Seven Years' War. The grant of these honours is the result of a systematic inquiry which is now being conducted at the War Office into the methods adopted in the past of granting such honours to corps. It is notorious that in some cases where a successful campaign or battle has been commemorated, certain regiments which have shared in the operations have, for no apparent reason, been omitted, while others, whose claims appear to be identical, have been included in the grant of the distinction. Similarly, as far as the grant of honours is concerned, certain campaigns and actions had been ignored altogether, although they are at least of equal importance in the military history of the British Empire with campaigns that have been officially commemorated. Such inequalities of treatment are due largely to the fact that the grant of regimental honours for campaigns and actions was hardly known before the beginning of the 19th century, and at first no systematic distribution of such honours, after scientific inquiry, was undertaken. Even the grant of honorary distinctions for the Peninsular War was spread over a period of years, with the result that many anomalies are apparent. Some portions of our military history have been already thoroughly investigated by special committees with a view to ascertaining what honours should be granted; thus, the Duke of Marlborough's campaigns were exhaustively dealt with in the year 1882 by a committee presided over by the late General Sir Archibald Alison, and various Indian campaigns have been thoroughly inquired into under the orders of the Indian Government, but a wide field still remains unexplored.

A general inquiry into many of the applications by regiments for grants of battle honours and distinctions convinced the Army Council that a systematic investigation of the whole matter was advisable. Consequently, rather more than a year ago the Council directed the constitution of a permanent committee, whose business it would be to deal with applications for honorary distinctions, and to advise on all such matters. The Council were fortunately able to obtain for the purpose of this committee the voluntary services of the Hon. J. W. Fortescue, M.V.O., the distinguished author of "The History of the British Army" and other well-known military works, who is acting as a member. The present chairman of the committee is Major-General J. S. Ewart, C.B., Director of Military Operations. The list of honours appearing in this month's (July) Army Orders is the first-fruits of the labours of this committee, which is still prosecuting its inquiries, and it may therefore be expected that further grants of honours will be submitted to His Majesty for approval in due course.

The Territorial Force: The Strength of the Force.—The War Office issued recently a return of the Territorial Force on 1st July, 1909, as a Parliamentary Paper (103).

Home.

The return gives a table showing the number of officers, non-commissioned officers and men serving in all branches, combatant and non-combatant, in comparison with their establishment. The totals of all arms are as follows :—Establishment : officers, 11,267 ; non-commissioned officers and men, 302,047 ; strength : officers, 9,505 (not including 729 officers on the unattached list of officers of the Officers' Training Corps and 732 officers of General Hospitals and Sanitary Companies available on mobilisation) ; non-commissioned officers and men, 260,676. The following are the figures for the various arms :—Cavalry : establishment, officers, 1,345 ; non-commissioned officers and men, 24,864 ; strength, officers, 1,173 ; non-commissioned officers and men, 24,220. Horse and Field Artillery : establishment, officers, 1,211 ; non-commissioned officers and men, 33,009 ; strength, officers 982 ; non-commissioned officers and men, 28,778. Garrison Artillery : establishment, officers, 466 ; non-commissioned officers and men, 11,808 ; strength, officers, 386 ; non-commissioned officers and men, 8,872 ; Engineers : establishment, officers, 590 ; non-commissioned officers and men, 14,848 ; strength, officers, 522 ; non-commissioned officers and men, 12,753 ; Infantry : establishment, officers, 5,669 ; non-commissioned officers and men, 194,966 ; strength, officers, 5,013 ; non-commissioned officers and men, 167,114 ; Army Service Corps : establishment, officers, 322 ; non-commissioned officers and men, 8,619 ; strength, officers, 276 ; non-commissioned officers and men, 7,401 ; Royal Army Medical Corps : establishment, officers, 1,468 ; non-commissioned officers and men, 13,919 ; strength, officers, 1,067 ; non-commissioned officers and men, 11,538 ; Army Veterinary Corps : establishment, officers, 196 ; non-commissioned officers and men, 14 ; strength, officers, 86 ; men, *nil.*

The number of officers, non-commissioned officers, and men now serving under 20 years of age were 324 officers and 98,335 non-commissioned officers and men. The number of non-commissioned officers and men serving on 1st July last on a one-year engagement (or re-engagement), or with less than a year to serve on a two-year engagement, the return states was 62,506, of the number of men whose period of service expires in July, 1909, is 180.

Austria-Hungary.

A New Army Corps.—According to the *Neue Freie Presse,* General Varešanin, the present Commander-in-Chief of the Forces in Bosnia-Herzegovina, will in the autumn be nominated Statthalter of Bosnia-Herzegovina with extended powers. The command of the XVth Army Corps, stationed in the annexed provinces, will then pass to General von Auffenberg. The military command at Zara will be erected to an army corps and transferred to Mostar or Ragusa, which will raise to two the number of the army corps on Bosnia-Herzegovinian territory, Bosnia and the northern half of Dalmatia forming the XVth Corps, Herzegovina and South Dalmatia the XVIth, the command of which will be given to Lieut.-General Cvitkovic. Lieut.-General Fanta, at present commanding at Zara, is to retire.

Mobile Field Kitchens.—The *Armeeblatt* of the 24th of June last announces that by next autumn the whole Austro-Hungarian Army will be provided with mobile field kitchens. The model which has been finally adopted is styled M. '09, has four wheels, with a front and rear body, and will be drawn by two horses.

This kitchen is equipped with four nickel coppers, one of which is very small, and an oven for roasting; they are heated by means of a large and small stove (the latter serves for the roasting oven). The fore body of the vehicle comprises a large iron receptacle, which serves as a pantry, ventilated by means of blinds, and divided by a vertical bulkhead into two compartments of unequal size, the largest being intended for the fresh meat, and the smaller for the necessary cooking ingredients and utensils. The rear part contains the iron case for the coppers, the stoves and chimney, the large stove being worked from the rear and the small one in front. Each copper is provided with a safety-valve. In cases where it is necessary, the hinder part can be detached from the front and drawn by itself. The whole weight of the kitchen is 569 kgs. (1,254 lbs.).—*La Revue d'Infanterie.*

Austria's Air Fleet.—Negotiations have been opened, according to the *Berliner Tageblatt*, between the military authorities and the Austrian Society of Dirigible Balloons, in regard to the purchase of a *Lebaudy* airship, which will shortly be completed.

The airship will be the first unit of the Austrian aerial fleet. By the end of 1909 two airships of the approved type will be at the disposal of the military authorities:—

A small *Parseval*, with a capacity of 1,800 cubic metres (63,600 feet);
A large *Lebaudy*, with a capacity of 3,600 cubic metres (176,000 feet).

This last will be almost similar to the French *République* type, the dimensions being as follows: length, 60 metres (196·8 feet); maximum diameter, 10 metres (32·8 feet); a 70-h.p. motor, with two screws, making 850 to 1,100 revolutions a minute.

The motor and the envelope will be made respectively by the Daimler Works and the Austro-American India-rubber Factory at Vienna.

The *Parseval* is to be delivered at the end of the present month, and its trials will take place next month.

The military authorities are in negotiation for some important land at Fischamend, not far from Vienna, on which to erect a garage, which will be constructed temporarily of wood, and work will be commenced upon it immediately after the harvest. A gas manufactory will form part of the proposed installation.

These first installations will involve the further creations of ports of arrival for dirigibles, and it is reported that one of these will be at Doerkény (Hungary), where is the firing practice ground of the 4th, 5th, and 6th Artillery Brigades.—*Revue Militaires des Armées Etrangères.*

Budget of the Landwehr for 1909.—The total amount of the Budget voted for the Austrian *Landwehr* for the current year, exclusive of the amount deducted for the Gendarmerie and Military Police, amounts to

Austria-Hungary.

62,450,528 crowns (£2,602,105 6s. 8d.), showing an increase of 7,882,856 crowns (£328,452 14s. 2d.) over the corresponding vote for 1908.

The effective strength maintained stands as follows :—

Officers, 3,324—an increase of 112.
Subaltern officials, 974—an increase of 20.
Civil officials, 178—an increase of 55.
Subaltern employés, 241—an increase of 7.
Re-engaged non-commissioned officers, 3,705—a decrease of 157.
Men (less the re-engaged non-commissioned officers), 35,336—an increase of 2,138.
Pupils is the schools, 488—a decrease of 40.
Horses belonging to State, 5,115—an increase of 373.
Horses belonging to officers, 1,866—an increase of 6.

The figures relative to the calling out of the Reservists and *Ersatz*-Reservists are the same as for 1908.

The increase in the Budget is due to the following causes : 3,000,000 crowns (£125,000) in accordance with the law of 21st July, 1908, to assist the families of necessitous Reservists during the period they are called out; 2,376,000 crowns (£99,000) to increase the pay of officers and the allowance for the morning meal of the men; 600,000 crowns (£25,000) for the adoption of the new grey field uniform.

The most interesting changes to be noted are:—

a. The grouping of the sixteen *Landwehr* batteries already existing in groups of two batteries, and the constitution of eight corresponding *Cadres* for the ammunition columns and depôts.

b. The creation of new machine gun detachments.

c. The raising of the effective strength of the infantry companies by three men per company.

d. Certain measures of detail with the view of re-enforcing the Alpine battalions and to give them almost the constitution of battalions forming Corps by the appointment of doctors and accountant officers; the strengthening of the effectives of the machine gun detachments; the creation of a telephone equipment; and supply of field forges for these same detachments, and of light wagons to the battalion for the transport of munitions.

e. The provision in the non-Alpine regiments of a telephone equipment, the supply of destruction *matériel* to the Pioneers, and the equipping of a force of skiers.

Finally, some unimportant credits which, owing to the use to which they are applied, deserve to be noted :—

20,000 crowns (£833 6s. 8d.) to defray the expenses of officers proceeding abroad for study; and 60,000 crowns (£2,500) to encourage target practice among the civil population (the Tyrol and Vorarlberg not included), where a special organisation is required.—*Revue Militaire des Armées Etrangères.*

Germany. *Progress of Military Aerostation in Germany.*—A brief recapitulation of the progress Germany is making in this branch of science may not be without interest at the present time.

I.—*Dirigibles.*

1. *Non-Rigid System* :—

(*a*) *The "Parseval" Airships.* — "Parseval No. 3," completed in the beginning of the year, began her trials at the end of February, and they have been continued steadily since. This balloon has a capacity of 5,600 cubic metres (197,761 cubic feet); two motors, each of 100-H.P.; two screws 3 metres (9 feet 9 inches) in diameter; a car 31 feet long and 6 feet 6 inches wide, with an estimated speed of 15 metres (48·4 feet) per second.

"Parseval No. 2," which was in the early part of the year bought by the military authorities, has received a new envelope, giving it a somewhat longer body.

The military authorities have also ordered from the *Motorluftschiffs-studien-Gesellschaft* a new Parseval on a smaller scale, driven by a single 100-H.P. motor, and which is to be used for scouting.

(*b*) *"Siemens-Schuckert" Balloon.*—This balloon was to have been completed some three months ago. Its principal characteristics are: a capacity of 12,000 to 13,000 cubic metres (423,774 to 459,088 cubic feet); length, 130 metres (426 feet); three cars, in the front and hinder of which are placed two motors of 125-H.P. each, the four motors developing altogether 500-H.P., which are to give a speed of at least 60 kilometres (37½ miles) an hour.

(*c*) The Rhenish-Westphalian Motor Balloon Society is also constructing a non-rigid dirigible of 2,000 cubic metres (70,629 cubic feet) capacity, able to carry six people.

2. *Semi-Rigid System* :—

(*a*) *"Gross" Airships* (*Military*).—A new Gross dirigible was completed last May, and has been undergoing trials. It is the same size as the preceding one, with a capacity of 4,500 cubic metres (158,915 cubic feet), driven by two motors, each developing 75-H.P. These balloons are now styled as follows:—

"Gross No. 1" is the *Balloon Training Ship;*
"Gross No. 2" becomes *"Gross No.* 1," and the last completed *"Gross"* becomes *"Gross No.* 2."

(*b*) Other dirigibles under construction are one each by the Durkopp Firm at Bielefeld and the Harburg-Vienna India-rubber Manufactory at Harburg, both of the semi-rigid type.

3. *Rigid System* :—

(*a*) *The "Zeppelin" Airships.*—The Zeppelin subscription produced a sum of about 6,096,555 marks (£304,827), and the Count has started with it an institution which, under the name of the "Zeppelin-Stiftung," has received the approval of the Government. This establishment has found the principal funds for a company formed at Friedrichshaven for the construction and working of dirigibles under the name of the "Luftshiffbau Zeppelin."

"Zeppelin No. 2" was completed some three months ago. It is 136 metres (446·2 feet) long and 13 metres (42·6 feet) in diameter, with a cubic capacity of 15,000 metres (529,717 cubic feet). Its two motors each develop 110-H.P.,[1] and drive two double-bladed screws. After a very successful flight from Friedrichshaven to Cologne it was taken over by the military authorities. It is to be permanently stationed at Cologne.

"Zeppelin 1" is 135 metres (442·9 feet) long, with a diameter of 10 metres (32·8 feet); two 85-H.P. motors working two three-bladed screws, and has a capacity of 12,000 cubic metres.

"Zeppelin 3" has been completed and tried, its latest achievement being the trip from Friedrichshaven to Berlin. It has the same characteristics as "Zeppelin 2."

"Zeppelin 4," which is also to be built this year, will be provided with three motors of 150-H.P. each.

(*b*) Another dirigible under construction at Mannheim is the "Schütte," designed by Professor Schütte, Professor of Naval Construction at Danzig. It will be of the rigid type, and will have a capacity of 19,000 cubic metres (671,340 cubic feet), and will be driven by two motors of 150-H.P each. It will, however, not be completed before 1910.

II.—*Garages for Dirigibles and Works Attached to them for the Manufacture of Gas and for Inflating.*

1. *Already Constructed.*—There are already existing:—

At Manzell (on Lake Constance close to Friedrichshaven) a fixed garage and also a floating one for dirigible "Zeppelins";

At Bitterfeld (to the north of Leipsic, on the Mulde) a garage for "Parseval" dirigibles;

At Reinickendorf (north of Berlin) a garage for "Parseval" dirigibles; two garages for "Gross" dirigibles; and a garage made to take to pieces and intended for transportation for use at the manœuvres. It consists of two rows of iron poles, forming a framework which is surrounded by canvas. It is 120 metres (393·7 feet) long, 20 metres (65·6 feet) broad, and 25 metres (82 feet) high, and can be put up in 24 hours.

Near Berlin (to the north) a garage for the "Siemens-Schuckert" dirigible.

At Bitterfeld and at Reinickendorf are installations for inflating, and it is probable that another will be constructed close to the garage for the "Siemens-Schuckert."

2. *Under construction*:—

At Friedrichshaven, a double garage, which will allow of two "Zeppelins" being constructed at the same time, which will be about 200 metres (656 feet) long; and a garage with wooden framework covered with sail-cloth, also intended to shelter a "Zeppelin";

At Metz, a garage constructed by the military authorities, which will allow of shelter for a "Zeppelin," a "Parseval," and a "Gross"; it is

---

[1] These are the engines of the old "Zeppelin 4," destroyed at Echterdingen.

Germany.

about 150 metres (492 feet) long, 40 metres (131·2 feet) wide, and 30 metres (98·4 feet) high, and is now approaching completion;

At Cologne, 10 kilometres (6¼ miles) north-west of the town, a garage similar to the one at Metz is also being constructed by the military authorities, which is to be 160 metres (524·1 feet) long, 40 metres (131·2 feet) wide, and 30 metres (98·4 feet) high;

At Griesheim (the drill-ground for the Darmstadt garrison) a garage, which is being constructed by the Pioneer Battalion No. 21 of the VIIIth Corps in garrison at Mayence;

At Leichlingen (half-way between Cologne and Düsseldorf, on the right bank of the Rhine) a garage, which is being constructed by the Municipal Council of Leichlingen and the Rhenish-Westphalian Society.

There is also being built at Friedrichshaven works for the manufacture of hydrogen and oxygen, and a gasometer with a capacity of 25,000 cubic metres (883,333 cubic feet); at Cologne, works for the manufacture of hydrogen; and at Leichlingen, works for the manufacture of both hydrogen and oxygen.

3. *Garages Projected.*

As the result of a movement emanating from different large towns in Germany, a society is being formed for the construction of garages for dirigibles. A Berlin firm, in conjunction with some of the electrical firms and large industrial manufactories on the Rhine, are considering a plan for the construction of a garage working on a pivot, of which the cost will rise to 500,000 marks (£25,000).

The first towns which will probably be supplied with such a garage will be Berlin, Munich, Cologne, Düsseldorf, and Frankfort-am-Main.

The society has already entered into negotiations for the construction of these garages with the following 16 towns: Zurich (where will be held this autumn the competition for the Gordon-Bennett Cup), Munich, Stuttgart, Nuremberg, Mannheim, Würtzburg, Frankfort-am-Main, Cologne, Düsseldorf, Erfurt, Dresden, Halle, Magdeburg, Berlin, and Hamburg.

Creation of a School for Chauffeurs for Dirigible Balloons. — The German Airfleet Company (*Luftflottenverein*), founded last spring, has started at Friedrichshaven a school for chauffeurs and conductors (*Luftmannschule*), which is under the superintendence of Lieut.-General Nieber, late Commandant of the Balloon Battalion. The course of study will last three years; young men will enter the school after having completed their period of studies at the intermediate schools and completed a year of practical work at the Friedrichshaven school. The first year will be devoted to theoretical instruction, the second to practical work in the aeronautical workshops, and the third to ascents and voyages in dirigibles and flying machines. The young men then trained will perform their period of military service in the Balloon Battalion.—*Revue Militaire des Armées Etrangères.*

An Armoured Auto-Machine Gun.—According to *Streffleur's Militärische Zeitschrift*, Herr Slayer, a civil engineer, of Heilbronn, has constructed an armoured auto-machine gun, the height of which is only 90 cm. (3 feet). The chassis is raised 40 cm. (1 foot 4 inches) above the ground. The motor, which is of 20-h.p., is placed behind, and can

Germany.

be worked without the driver being obliged to move from his seat. Alongside the motor has been arranged the necessary room for the reservoir of benzine and supply of water, etc. The ammunition is placed close to the gun in the front part, which is protected by steel or nickel armour. The whole is painted grey. When the seats are turned down the automobile can carry several persons sitting on the floor of the car. Experiments are to be carried out with this auto-mitrailleuse during the forthcoming Imperial Manœuvres.

Russia.

The Primary Education of the 1907 *Recruit Contingent.*—According to the *Ruski Invalide,* the percentage of the recruits of the 1907 contingent who have received primary education is 53·2; of these 40·9 can read and write, and 12·3 who can only read. The Russian organ states that the number of recruits who have received primary instruction has increased, as the following percentages show :—

In 1903, the number of men who could read and write were 32·5 per cent, and of men who could only read, 6·9 per cent., or a total of only 39·4 per cent. who had any primary education. In 1904 the percentages were as follows : 31·3 who could read and write, 8·6 who could only read, making a total of 39·9. In 1905 the percentages were: 32·6 and 8·8, making a total of 41·4; in 1906, 36·8 and 9·2, making a total of 46. The number of recruits, then, who have received primary education has increased during the last few years by 14 per cent.

The *Ruski Invalide* remarks that in these conditions (in 1907 46·8 per cent. of the recruits being illiterates), the Russian Army finds the greatest difficulty in filling the ranks of the non-commissioned officers, who have in these days a very difficult task to fulfil, not only in the field but in time of peace, particularly in the former case, where, in consequence of loss among the officers, they will have to perform the duties of the latter.—*Revue d'Infanterie.*

Suppression of Drummers in the Field.—An Order has been issued doing away with the employment of drummers in the field.

In time of peace the drummers will only carry a revolver, but they will be exercised in rifle drill and firing, and will join the ranks like other soldiers during the summer musters of troops and the manœuvres.

According to *Danzer's Armee Zeitung,* during the Russo-Japanese war the drums came to be considered as useless and only encumbrances, the bugles proving sufficient for all signals. In many companies the drums were thrown away in order to send the men carrying them into the firing line. Their suppression will allow Russia to increase by 10,000 the number of rifles she can put into line.

Defects of the Russian Rifle.—The *Neue Militärische Blätter* quotes from the *Invalide Russe* certain grave defects which, according to General Martinoff, exhibited themselves in the Russian rifle during the war in Manchuria :—

1. The dust easily found its way into the chamber, and the powder, of very bad quality, leaving much fouling, the weapon so rapidly got choked that it was necessary to clean it during action.

2. The sight was so badly fixed that it soon got out of line, causing great errors in the aiming.
3. The cartridges did not easily enter the chamber, and the rims were so sharp that the men injured their fingers during rapid firing.
4. The bullet badly fitting caused difficulties in loading and delays in firing.

La France Militaire, on its side states that the long and flexible bayonet bent when it met with any resistance (such as the plate of a belt, etc.) to such an extent that the soldier often found himself disarmed.

New Organisation of the Infantry Depôt Battalions.—The organisation of the infantry depôt battalions dates from 1885. The partial mobilisation at the time of the war in Manchuria brought to light the defects in this organisation, more especially the following :—

1. These battalions form part of the local brigades, whereas by their destination and service they really belong to the field force.
2. Their effective strength was not definitely settled, and was determined more or less according to circumstances, which often led to its being maintained at two or three times the number more than was necessary.
3. There existed no connecting link between the mobilisation plans of these battalions and those of the regiments to complete which these battalions were intended.

The *Prikaze* No. 23 of January of this year lays down the following organisation for these depôt battalions :—

Object.—The depôt battalions are charged with the duty, in time of war, of preparing and training the necessary *personnel* for filling up the vacancies in the Regular regiments.

Constitution.—Each battalion to consist of four companies; in exceptional cases a battalion can have more than four companies, but the number is never to exceed eight.

The effective comprises : a *permanent personnel* and a *contingent personnel.*

The *permanent personnel,* selected by name in time of peace, consists of :—

Officers (taken from the *personnel* of the corresponding active regiment): 1 battalion commandant, 1 assistant to the commandant (charged with the administrative duties, 4 company commanders,[1], 1 adjutant (in charge of arms and equipment), 1 paymaster. If the battalion consists of more than 4 companies, a company commander is selected for each additional unit.

The battalion commandant is appointed by the general of division, and the other officers by the colonel of the active regiment.

Officials : 1 reserve doctor, 1 administrative official (from the active corps).

---

[1] One taken from the company commanders of the regiment and 3 officers selected from the list of candidates for this employment.

Russia.

Non-commissioned Officers and Men: 91 non-commissioned officers (80 from the reserve), 12 privates, 9 clerks (8 from the reserve), 11 hospital attendants (9 from the reserve), 1 armourer and 14 mechanics (from the reserve); a total of 138.

Horses: 7.

The *contingent personnel* includes: some officers from the reserve, some auxiliary subordinate officers of the reserve on active service, some reservists, some men of the 1st roster of the *Opoltechnie*, some non-incorporated recruits, some volunteers with less than two months' service, and some non-mobilisable young soldiers. This effective consists of 1,000 men at most for a battalion of four companies, with 250 men at most for each company over and above this.

Organisation.—There is formed a depôt battalion for each regiment of infantry of the field army and of reserve, as well as for each of the corps specially indicated in the mobilisation returns. In the mobilisation territory of each army corps each depôt battalion draws on a particular sector corresponding to the recruiting district of the corresponding regiment.

The formation of the depôt battalions is carried out by the corresponding regiment; they take the number or the designation (as the Guard, for example) of these corps.

Mobilisation.—At the moment of a mobilisation (general or partial) all the depôt battalions corresponding to the mobilised regiments are also mobilised. The mobilisation plans are settled by the battalion commander under the direction of the colonel commanding the regiment, and must be approved by the general of the division.

Depôt Brigades.—The depôt battalions of an army corps form a depôt brigade.[1] Certain battalions not included in an army corps are to join the nearest depôt brigade or form an independent brigade. The commander of the brigade is nominated during peace by the general commanding the army corps. At mobilisation he has at his disposal a brigade staff (*oupravlenic*) of 2 officers, 1 doctor, 8 clerks and 2 orderlies (nominated during peace time).

Matériel.—Each depôt battalion is provided during peace with its complete war equipment; it can, moreover, if necessary take possession of *matériel* intended for other regiments or establishments, and *matériel* left at the depôt by the corps in the field on their departure.

Compagnies de Marche.—The losses of each regiment are made good by the depôt battalion selected by the General Staff, according to circumstances; but for preference by the corresponding battalion. These drafts are made by whole companies, which are called *compagnies de Marche.* They are made up from the contingent *personnel* of one or several companies of the battalion; their strength is not to exceed 250 men, and they are sent to the front fully equipped for the field.

The effectives of the depôt battalions are made up to their full strength by the exertions of the Staff of the Minister. They receive men discharged from hospital; the officers, after they are cured, are sent to join the depôt battalion of their corps, the men the nearest battalion. In no case are either officers or men taken on the strength who, although cured, are unfit for service.

---

[1] Sometimes, in exceptional circumstances, two.

Russia.

Demobilisation.—The demobilisation of the depôt battalions is superintended by the Staffs of the district, the battalion commander being allowed to retain the necessary *personnel* for clearing up the administrative work. The taking over the stores is carried out by a committee, which includes representatives of the different services (control, commissariat, artillery, engineers, and medical), and three officers at least of the battalions.—*Revue Militaire des Armées Etrangères.*

New Marriage Regulations for Officers.—A new Order regulating the marriage of officers has recently been issued by the Minister of War. In the past, Russian officers were not allowed to marry before the age of 23. In addition the *fiancée* had also to belong to a good family, be well bred and of irreproachable character, account being also taken of her social position.

An officer between 23 and 28 years of age had to possess the following pecuniary means over and above his pay : 300 roubles (£46 17s. 6d.) net annual income, or a capital of 5,000 roubles (£781 5s.) in money or securities, capital, which had to be held in trust, and of which not more than 300 roubles could be touched yearly, including his income. Exceptions were made where the *fiancée* was the daughter of an officer of 25 years' service, when half this sum was considered sufficient, and in the case of officers' widows with a young family, and of officers belonging to the Amur district. The colonel of the regiment had to give his consent for the marriage taking place or not, first submitting his decision for the approval of the general commanding the division, who decided in the last resort.

For the future, the obligation of proving the possession of a certain amount of income is done away with. In the case of officers of the rank of captain commanding companies and upwards, it lies with the colonel alone to give his consent to the marriage or not, when he has given due regard to all the circumstances of the case (social and pecuniary position of the family of the *fiancée*, etc.). In the case of subaltern officers, the social position and general suitability of the *fiancée* is settled by the court of honour of the officers of the regiment, who make their report to the colonel, who gives the final decision without referring the matter to the general.

In publishing the new Regulation the *Rouskii Invalid* makes the following comments :—

Since the introduction in 1869 of compulsory military service, admission to the rank of officer has become possible to everyone, including young men without money. To require pecuniary guarantees up to the age of 28 from officers anxious to marry was to force young men in this last category either to remain celibates or to marry without permission, or what was worse still, to contract irregular unions, and consequently compromise their careers.

In 1889, the date when the regulations now modified were issued, the pay of officers was too small to allow of a young lieutenant without any fortune founding a family and bringing up children, and it was therefore logical not to encourage him to marry. Most of the general officers consulted are now, however, of opinion that the considerable increase of pay granted to officers last January allows of the restrictions on marriage of officers without private means being withdrawn.

Russia.

On the other hand, the reference of the request to marry to the officers' court of honour furnishes a sufficient guarantee that the position of the family of the girl and her general suitability will be satisfactorily enquired into, and will assure to the bride a kindly reception into the regimental family, directly interested as they are in the respectability of all their members.

Finally, the definite decision in the matter being left to the colonel commanding is also logical, as he is clearly more competent to decide on matters affecting his corps of officers than the general, and it further raises the authority and prestige of the colonel, on whom alone will fall the full responsibility for the decisions he arrives at.—*Journal des Sciences Militaires.*

NAVAL AND MILITARY CALENDAR.

AUGUST, 1909.

2nd	(M.)	Tsar and Tsaritsa arrived in Imperial Yacht *Standart* at Spithead and were received by the King. Fleet reviewed by their Majesties.
5th	(Th.)	Tsar and Tsaritsa left Cowes. "Zeppelin Airship No. II" voyaged from Frankfort to Cologne.
6th	(F.)	Lord Kitchener accepted position of High Commissioner and Field-Marshal Commanding-in-Chief in the Mediterranean.
8th	(S.)	Tsar and Kaiser met in Kaiser Wilhelm Canal.
13th	(F.)	Sub-Committee of Imperial Defence Committee appointed to examine questions of Naval Policy raised by Lord C. Beresford issued their Report.
27th	(F.)	"Zeppelin III" left Friedrichshaven for Berlin. Compelled to land at Nuremberg through defect in motor.
29th	(S.)	"Zeppelin III" arrived in Berlin.

FOREIGN PERIODICALS

NAVAL.

ARGENTINE REPUBLIC.—*Boletín del Centro Naval.* Buenos Aires: May, 1909.—Has not yet been received.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 9. Pola: September, 1909.—"The Report to the Chamber on the Italian Naval Estimates of 1909-10." "Progress in Artillery *Matériel* in 1908-09." "The School of the Captain." "'English Naval Estimates for 1909-10." "The "Nicholson" Log." "The Submarine and Submersible Flotilla's Manœuvres off Cherbourg." "The Principal Features of the Latest French Battleships."

BRAZIL.—*Revista Maritima Brazileira.* Rio de Janeiro. June, 1909.—"The "Riachuelo." " "In Commemoration of the 11th of June." "The Evolution of the Torpedo Boat Destroyer." "Practical School of Artillery." "The Brazilian Navy" (*continued*).

CHILI.—*Revista de Marina.* Valparaiso: May, 1909.—"Our Obligation at the Present time." "Political and Military Study of Japan" (*continued*). "The Engraving and Printing of Marine Charts." "The Climate of the Coast of Chili" (*concluded*). "Halley's Comet." "Atlo-occipital Dislocation." "Observations on the Gun Armament of Large Battleships." "Torpedoes, Mines, and Submarines." "Reform in the matter of Projectiles and Coast Artillery" (*continued*).

FRANCE.—*Revue Maritime.* Paris: June, 1909.—"The Parsons-Turbine Motors of Torpedo Boat No. 293." "Obituary Notice: Capitaine de Frégate Georges Pierre." "Are Battleships of Very Large Tonnage Economical?" "Battle Tactics of the Single Line." "The Defence Proposals of the Danish Government."

La Marine Française. Paris: August, 1909.—"The Enquiry into the State of the Navy." "The Progress in the Navy." "Our Fleet and its Harbours." "The Launch of the *Danton*." "Admiral Boué de Lapeyrere's Evidence before the Commission of Enquiry." Correspondence: (1) "The Dockyard Plant at Toulon"; (1) "The Trials of the Destroyer *Chasseur*." "The Brussels Exhibition of 1910."

La Vie Maritime. Paris: 10th August, 1909.—"The New Minister of Marine." "Our Law Suit." "At the Ministry of Marine." "Loss of Submarine *C11*." "The Utilisation of Naval Officers" (*concluded*). "The

Naval Promotions." 25th August.—"The Concentration of Forces." "Secret Documents." "The Firing at the *Iéna.*" "Some Considerations on the Administrative Working of the Fleet in Commission" (*concluded*). "Naval Artillery." "The Question of Projectiles" (*concluded*). "Organisation of our Fleets in Commission in 1910."

Le Yacht. Paris: 7th August, 1909.—"The Great Naval Councils." "Yachting Notes." "The U.S. *Dreadnoughts.*" 14th August.—"The Under-Secretary of State of the Navy." "Yachting Notes." 21st August.—"The General Inspections." "Yachting Notes." "*Apropos* of *Dreadnoughts.*" "The New German and Japanese Battleships." 28th August.—"The New Distribution of the French Naval Forces." "Yachting Notes." "The Torpedo Experiments against the Italian Battleship *Francesco Morosini.*" "The Submersible *Archimède.*"

Le Moniteur de la Flotte. Paris: 7th August, 1909.—"The Crisis of the Flotillas." "The Administrative *Personnel.*" 14th August.—"For the Fleet." "The Minister of Marine at Toulon: The Firing at the *Iéna.*" 21st August.—"Firing Questions." "The Plan of our Armaments." "The Naval Estimates." "The Food of the Sailor."

GERMANY.—*Marine Rundschau.* Berlin: August-September, 1909.—Contents given last month.

ITALY.—*Rivista Marittima.* Rome: June, 1909. — "Advantageous Tactical Positions." "Reflections on Naval Command." "Sea-borne Trade in the Italian Ports in 1906." "The Supply of Funds for Ships of the Royal Navy."

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon: July, 1909.—"Unpublished Documents for a History and the Geography of Ethiopia." "Native Manners and Customs of the Lourenço Marques Country." "Colonial Problems" (*continued*). "Genealogical and Biographical *Data* of some Fayal Families" (*continued*).

Annaes do Club Militar Naval. Lisbon: July, 1909. — "Practical Schools." "Fire Control." "Naval Hygiene."

SPAIN.—*Revista General de Marina.* Madrid: August, 1909.—"The London Naval Conference." "Causes of the Exit." "The Naval Estimates for 1909." "Torpedoes and Mines."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 5th August, 1909.—"Mene Tekel! (Melilla-Madrid-Barcelona)." "The New Position of the Chief of the General Staff." "The Ammunition of Field Artillery in its Tactical, Technical, and Moral Importance." "A Soldier's Letter out of the Year 1866." "Montenegro and Albania." "The Teheran Military

Academy." "Fortified Field Positions." 19th August.—"A Glorious Campaign (the Battle of Novi, 1799)." "The Swing of Russian Policy."

Streffleurs Militärische Zeitschrift. Vienna: August, 1909.—"History of the War for Freedom, 1813-15." "The Military-Political Events in Constantinople and the Operations of the Salonika Army in April, 1909." "Scouting Service in General and the Artillery Scouting Service in Particular." "A New Mounting for High-angle-fire Guns." "The Patrol Conference of the Italian Cavalry."

Kavalleristische Monatshefte. Vienna: July-August, 1909.—The contents given in last No. of JOURNAL.

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th July, 1909.—"Grand French Manœuvres in 1908" (*continued*). "Field Artillery in Conjunction with other Arms" (*continued*). "Manœuvre Regulations for the German Army." 31st July.—"Grand French Manœuvres in 1908" (*concluded*). "Field Artillery in Conjunction with other Arms" (*concluded*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 15th August, 1909.—"Initiative in War." "Studies on the Sanitary Service in the Field." "Our Cavalry is Badly Saddled, Badly Clothed, and Badly Equipped." "Les S.A.G." "The 29th August, 1870, and the Army of the Meuse" (*concluded*).

Revue d'Infanterie. Paris: July, 1909. — "The Infantry Fight." "New Firing Regulations of the Russian Army." "The New Manœuvre Regulations for the Spanish Infantry" (*continued*).

Revue de Cavalerie. Paris: August, 1909.—Has not yet been received.

Revue d'Artillerie. Paris: June, 1909.—"On the Elastic Equilibrium on the Action of Variable Forces." "War Firing Practice in the Artillery." "The 75-mm. Field Gun in the Night Action of Bou-Denib."

Revue Militaire Général. Paris: July, 1909.—"Study on the Period from the 5th to the 14th June in the Campaign of 1807." "Waterloo." "Two Studies of Alpine Tactics" (*concluded*).

Le Spectateur Militaire. Paris: 1st August, 1909.—"The Letters of Major Kretschman (1870-71)." "Principles which should Serve as a Base for the Organisation Laws." "The Conscription of Native Mussulmans in Algeria" (*concluded*). 15th August.—"Souvenirs of an Officer of the 13th of the Line." "The Letters of Major Kretschman (1870-71)" (*continued*). "Principles which should Serve as a Base for the Organisation Laws" (*continued*). "Manœuvring in Woody Country."

Revue d'Histoire. Paris: August, 1909.—"The Battle of Mollwitz." "The Campaign of 1813: The Preliminaries." "The Causes of the Austrian Defeat in 1866." "The Mitrailleuse in 1870." "The War of 1870-71: The National Defence in the Provinces" (*continued*). "Unpublished Letters of Napoleon I." (*continued*).

Revue Militaire des Armées Etrangères. Paris : August, 1909.—"The Budget of the German Empire for 1909." "The New Manœuvre Regulations of the German Cavalry." "The New Foot Artillery Regulations."

GERMANY.—*Militär-Wochenblatt.* Berlin : 3rd August, 1909.—"The Pay Regulations of the 15th July, 1909." "A Hundred Years Ago" (*continued*). "The German Small Arms Experimental Establishment at Halensee, near Berlin." 5th August.—"The French Left Flank on the Lisaine from the 15th to the 17th January, 1871." "Malingering and Self-inflicted Injuries in the different Armies." "From the Netherlands Army." 7th August.—"The French Left Flank on the Lisaine from the 15th to the 17th January, 1871" (*concluded*). "Malingering and Self-inflicted Injuries in the different Armies" (*concluded*). 10th August.—"The New Service and Instruction Regulations of the Military Technical Academy." "Halkett and Cambronne." "French Experiences in the Chuja Campaign in Morocco." "Intelligence from the Belgian Army." 12th August.—"A Hundred Years Ago—Kunersdorf" (*continued*). "The Commanding Generals of the German Army from 1889 to 1909" (*continued*). "Promotion Questions in Italy." "On the Acquisition of Manœuvre Areas." 14th August.—"The Military Employment of Balloons." "A Hundred Years Ago" (*continued*). "Recollections of the Battle of Sedan and the Last Days of the Commune in Paris, 1870-71." 17th August.—"Spain's War in Morocco." "A Hundred Years Ago — Kunersdorf" (*continued*). "The Military Employment of Balloons" (*concluded*), 19th August.—"Frederick the Great and the Artillery of his Field Army." "Montenegro." "Medical Establishment of the Russian Army in War." "Coloured Distinguishing Marks for Field Guns." 21st August.—"From the Hard Times at Belfort." "Cavalry Recruiting in 1546." "Montenegro" (*concluded*). 24th August.—"The English Mediterranean Command." "From the Hard Times at Belfort" (*concluded*). "Once More Provision of Manœuvre Areas." 26th August.—"Appeal for the Erection of a Memorial to General von Alvensleben." "Gymnastics and Military Service." "The Mobilisation of an English Division." 28th August.—"To Count Zeppelin!" "The Royal Saxon Jäger and Rifle Regiments during their 100 Years of Existence." "Insurance against Accidents and the Army." "Reform in the Courts of Honour of Russian Officers." "Flags to show Losses." "Spain's War in Morocco" (*continued*). "Reorganisation of the Artillery in Portugal."

Artilleristische Monatshefte. Berlin : August, 1909.—"Report of the Military Commission on the Reorganisation of the French Artillery" (*continued*). "Field Artillery in Ambush." "Development of the Field Artillery Question and the 3-inch Field Gun in the United States." "Foot Artillery Considerations." "Some Applications of the Calculation of Probabilities to Musketry Instruction." "Statistical Calculation of a Wheel."

Jahrbücher für die Deutsche Armee und Marine. Berlin : August, 1909.—"How can we get rid of Red Tape?" "Organisation Questions regarding the Russian Technical Troops." 'Supplement to the Training of the German Infantry for Fortress Warfare." "Punishment of Men on Furlough for Breaches of Discipline." "Inferior Armies." "Submarine Gun and Submarine Weapons on board a Battleship." "A Parallel between the Campaigns of 1828-29, 1877-78, and 1904-05."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: May, 1909.—"Considerations on the Reorganisation of the Artillery." "Automobiles in the Different Armies." "Rules for Executing Panoramic Military Sketches." "Windlasses on the Ressa System."

Rivista Militare Italiana. Rome: July, 1909. — "Speech of the Minister of War in the Chamber of Deputies on 11th June, 1909." "Points on the Psychology of Command." "Advanced Guards and their Duties" (*concluded*). "Men of Other Times." "The Military Decadence of Venice" (*continued*). "The Armies of the States of Europe." "The War Office and the Central Organs of the Army" (*continued*). "From Novara to San Martino" (*concluded*). "Some Geographical Military Notes on the Territory between Massowa, Asmára, Acsùn, and Adigrat" (*continued*). "Notes on the New Infantry Tactical Regulations."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid: August, 1909.—Has not yet been received.

Revista Científico-Militar y Bibliotéca Militar. Barcelona: 10th August, 1909.—"The Lessons of Casablanca and their Application to the Riffs." "Some Maxims of Napoleon." "Infantry Attack Formations from the Artillery Point of View" (*continued*). 25th August.—"The Preliminary Period of the Campaign." "Rules for the War in North Africa." "The Armies of the Future." "The French and Moroccans."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: August, 1909.—"The Swiss in Italy" (*continued*). "The German Cavalry." "Firing Practice with the 75-mm. Gun." "The Psychology of the Horse." "Infantry Drill Regulations."

NOTICES OF BOOKS

The Naval Annual, 1909. Edited by T. A. BRASSEY, A.I.N.A. Portsmouth: Griffin & Co. 1908.

Although the Naval Annual this year fully maintains on the whole the high standard of excellence to which we are accustomed to look in this well-known work of reference, yet it does not quite come up to last year's issue, for instance, which contained more than one article of exceptional interest by well-known expert writers, wanting in the present edition.

In his preface, the Editor again draws attention as he did last year to the practice now obtaining in our own and certain foreign Navies of withholding particulars of ships for the construction of which provision is made in the Estimates—a practice which he holds as being most unlikely to prevent those who wish to obtain the information from procuring it. In the United States no such concealment is attempted; the designs of ships are openly discussed, and Congress insists on being furnished with information as to the leading features of new ships before voting the money for their construction, and there is no reason to suppose that the U.S. Navy in any way suffers from this publicity. There is, on the other hand, Mr. Brassey considers, good grounds for believing that the practice initiated by the British Government in the case of the *Dreadnought*, and copied with greater success in Germany, is in no small measure responsible for the scare produced by the Debate on the Navy Estimates in March last, and he further thinks that the danger to our naval supremacy at the present moment and in the immediate future has been much exaggerated.

As usual, the first three chapters, which are the work of the Editor, assisted in the *data* in regard to foreign Navies by Mr. John Leyland, are devoted respectively to our own Navy, to foreign Navies, and to comparative strength, with the usual tables. In Chapter I., on the British Navy, Mr. Brassey expresses the opinion that, in view of the large additional burthens thrown on the British tax-payer for various purposes during the past year,

> "the resources of the United Kingdom are insufficient for the maintenance of a Navy up to the Two-Power standard. The command of the sea, which is absolutely vital to the safety of our scattered dominions and world-wide trade, cannot for much longer be secure unless the resources of the whole Empire are drawn upon for the common defence."

This, of course, was written before the recent meeting of the Imperial Defence Conference. He is of opinion, also, that as regards our building programme, it would have been far wiser to have devoted a large proportion of the sum allotted to submarines and some of that to be spent on destroyers to the laying down of two more battleships.

Chapter II., on foreign Navies, is full, as usual, of valuable information, the writer drawing attention to the deplorable condition into which the

French Navy has been allowed to drift; while the great extensions to German armaments are also touched upon. In Chapter III. he points out that the most noticeable features in the year under review have been the increased rate of progress of construction and the large addition to shipbuilding resources in Germany, and the delays, owing to labour troubles, in the completion of several of our own battleships and large armoured cruisers, as also the refusal of Congress for the second time to embark on the large programme of naval expansion proposed by the Naval Department, in spite of the vigorous support accorded to it by President Roosevelt. From the tables he gives it is evident that our present supremacy is only due to the generous building provision made in the past by previous Admiralties. Chapter IV., on Dockyard Administration, by Vice-Admiral W. H. Henderson, assisted by Mr. Herbert Russell, is an interesting and instructive one, as the Admiral writes with authority, having been for over three years Admiral Superintendent of Plymouth Dockyard; he has made a special study of the subject and is thus able to point out many of the weak points in the organisation of the Government Yards. Chapter V. is devoted to Alternative Systems of Propelling Machinery. It is interesting, but calls for no special comment.

In Chapter VI. the Marquis of Graham discusses the present position of the Royal Naval Volunteer Reserve. The Marquis, who has gained practical experience himself in the Mercantile Marine, is an enthusiastic Reserve Officer, holding the rank of Commander, and being in command of the Clyde Division. After tracing the history of the present Volunteer Reserve movement, Lord Graham points out how necessary it is, if the training of the R.N.V.R. is to be put on a really efficient footing, that every encouragement should be given to actual work at sea.

> "There is no question, he observes, but that the distressing malady of sea-sickness and the strangeness of sea routine and new surroundings much handicap the men in their work during first days afloat. There will be no time to acquire the ways of the sea in a Naval War. These things should be sought now in the time of peace."

In his concluding remarks, Lord Graham calls attention to the way the Naval Volunteer movement has taken root in the great Colonies of the Empire. Though not formed on exactly similar lines to the United Kingdom Reserve, the members are excessively keen in their work, and have always been well reported upon in respect of their drill, although they have been much handicapped as regards efficient and up-to-date naval training by reason of the small encouragement given to them by the Admiralty at home.

A most interesting and thoughtfully written chapter by Mr. John Leyland, on the Naval Expansion of Germany, follows, which will well repay reading. "Close, meditative, laborious, indefatigable was the process of inception, expansive the spring of inevitable development, and remarkable in the highest degree is the success with which the work has been put into execution," he writes in his concluding remarks. "The policy of Germany was declared long ago by Frederick William I.: 'Wenn Man in der Welt etwas will decidiren, will es die Feder nicht machen, wenn sie nicht von der force des Schwertes soutenirt wird.' This pregnant phrase was repeated by the German Emperor at the Zeughaus in Berlin on New Year's Day, 1900. The force behind the diplomatic pen of Germany, deciding her place in the world, is the strong fleet which she is bending all her efforts to create and maintain." In Chapter VIII. Mr. Leyland treats of last year's naval manœuvres of our own and foreign fleets, and he sums up those of our fleet as "entirely uneventful, and from the tactical point of view disappointing."

Part II. of the Annual consists of the usual lists and plans of ships of our own and foreign Navies; but an important and very useful feature has been introduced, on which Commander Robinson and Mr. Leyland, who are jointly responsible for this part of the work, are to be congratulated. The leading particulars of ships are given under the diagrams setting out their chief features, as well as in the usual list of ships. This will be found very useful, and will save students much trouble. Part III., on Armour and Ordnance, has again been undertaken by Commander Robinson and contains much useful information.

Part IV. is devoted, as usual, to the First Lord's Memorandum, with his speech in the House, when introducing the Estimates, and to our own and foreign Naval Estimates. Two interesting letters to *The Times*, by Mr. Frederic Harrison, on the question of our National Defence and the Aims of Germany, are also given.

PRINCIPAL ADDITIONS TO LIBRARY DURING AUGUST, 1909.

Sailing Ships. The Story of their Development from the Earliest Times to the Present Day. By E. KEBLE CHATTERTON. 8vo. 16s. (Sidgwick & Jackson, Ltd.) London, 1909.

The Nelson whom Britons Love. By HORATIO, Third Earl NELSON. Crown 8vo. 1s. (Presented.) (Jarrold & Sons.) London, 1909.

The State of the Navy. An address delivered to the London Chamber of Commerce by Admiral Lord CHARLES BERESFORD on the 30th June, 1909. Pamphlet. (Presented.) London, 1909.

Hohenlinden. By E. PICARD. 2 Vols. 8vo. 12s. (Henri Charles-Lavauzelle.) Paris, 1909.

Les Régiments de la Division Margueritte et les Charges à Sedan. By General ROZAT DE MANDRES. 8vo. 5s. 6d. (Berger-Levrault et Cie.) Paris, 1908.

Règlement sur les Exercises de la Cavalerie Allemande du 3 Avril 1909. Traduit de l'Allemand par le Général P. **Silvestre**. Crown 8vo. 2s. (Berger-Levrault et Cie.) Paris, 1909.

Education and Training of the German Infantry. General Staff, War Office. Crown 8vo. (Presented.) (Mackie & Co., Ltd.) London, 1909.

Notes on Organization and Equipment. By Lieut.-Colonel **Brunker**. 6th Edition. 8vo. 7s. 6d. (Presented.) (William Clowes & Sons, Ltd.) London, 1909.

Wellington's Campaigns in India. Division of the Chief of the Staff, Intelligence Branch. By Maj. R. G. **Burton**. 8vo. Calcutta, 1908.

Journal of an American Prisoner at Fort Malden and Quebec in the War of 1812. Edited by G. M. **Fairchild**, Junr. 8vo. 4s. 6d. (Frank Carrel, Ltd.) Quebec, 1909.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

JULY, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

Continued from August JOURNAL, p. 1132.

CONTENTS.

PAGE.
Part II. Section I. Books 1258

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II. SECTION I. BOOKS.

NOTE.—1. *When the price is not given in Part II., Section I., it is not known.*

2. *In Part II., Section I., books whose titles are given in foreign languages as well as in English, are published in those languages, and are not translated.*

TRAINING AND EDUCATION.

Infantry Fire-Tactics (Schiesstaktik der Infanterie). By Captain Jaxa Dembicki, of the Austrian Infantry. 163 pp., with tables of figures and results of shooting. 8vo. Vienna, 1909. Seidel. 4/-.

The author in his preface lays stress on the fact that in the official regulations, the question of tactics and development of fire effect are perhaps insufficiently dealt with in their relations to each other.

He therefore strives in his book to blend on one basis the tactical portion of the "Musketry Instructions" with the provisions of the drill and training manual which deal with the fire-fight.

The arrangement consists of three parts. The first part is merely a summary of points governing the application of shooting necessary for intelligent application by the individual. The second part is the major portion of the book. It is divided as follows:—

A. Historical development of fire action from the introduction of the breech-loading weapon up to the time of the South African campaign.
B. The provisions of the official manual (1903) and subsequent developments as learnt from the Russo-Japanese campaign.
C. General principles: The "Kerngarbe" (literally "sheaf-core," viz., the cone of fire at a given range, calculated from the ballistic properties of the weapon together with the individual errors of a squad or party firing, 30 per cent. of the rounds being disregarded as altogether un-aimed). Sighting in conformity with the known "Kerngarbe." Natures of fire. Volley firing. Zones of fire, &c.
D. Long distance firing.
E. Firing at medium ranges—in the case of defence and in attack.
F. Ditto with regard to short-range-firing.
G. Sudden or surprise opening of fire.
H. Machine-guns.
J. Influence of the ground.

The third part is devoted to the subject of direction of fire by leaders, followed by numerous examples and tables of results.

Hints for Instruction in the Study of Ground. (Leitfaden für den Unterricht in der Feldkunde). 13th edition. Official. 65 pp. 8vo. Berlin, 1909. Mittler. 3/3.

This is a text book of topography issued officially for use in the war schools. Part I. contains elementary definitions of natural features. Part II. discusses the military importance of the features described in Part I. Part III. gives the points which should be noted in reconnoitring railways, roads, villages, positions, &c. Parts IV. and V. contain information on map reading, setting the map, sketching in the field and triangulation with the plane table.

Austro-Hungarian Regulations for the Training of Troops (Vorschrift für die Truppenübungen). Official. 180 pp. 8vo. Vienna, 1909.

The previous edition of this manual appeared so far back as 1890, and consequently the present publication is practically an entirely new compilation. Details as to the training of units are not entered into, these appearing in the manuals for the various arms, but the general principles under which such training should be carried out are prescribed at some length, as also are details for the exercise of larger bodies, the carrying out of local and other manœuvres, and special exercises.

The general idea on which the system of training is based consists in careful progressive advance from the instruction of the individual up to the combined work of all arms. In each period the work should gradually proceed according to a well-conceived programme, suitable to the circumstances of the locality and the actual needs of war.

Attention is directed to the question of fitness for the severe physical exertions required in war, and troops throughout the year should be gradually trained in this respect; it is recognized, however, that in the case of reservists this is a difficult problem.

Formal inspections are prohibited. Inspecting officers should combine their inspections as far as possible and carry them out by means of an instructive exercise.

The training of the smaller units should conclude by the end of June, that of regiments three weeks later. All the larger bodies should work together for two to three weeks, and, if possible, in conjunction with opposing bodies.

Great stress is laid upon the carrying out of field-firing exercises, combined shooting of infantry and artillery, and the co-operation of these two arms. In fact the regimental training of infantry and artillery should in great measure take place concurrently. Cavalry are also encouraged to devote time to training for the fire-fight.

Marches and the carrying of equipment occupy several pages. Full peace kit should be carried by the infantry in the first instance, subsequently complete field equipment. Artillery should always have their limbers and wagons filled. Cavalry should carry out one exercise a week with complete peace kit, to be followed later by parades with full field equipment.

Separate sections are devoted to the following points:—(*a*) Acquaintance of officers with the working of arms other than their own. (*b*) Opportunities for all officers of handling units at full strength, when reservists and horses are called up for training. (*c*) Means of communication and the use of the telephone by all branches. (*d*) Night operations. (*e*) The "rencontre" engagement. (*f*) Mountain operations. (*g*) Passage of rivers. (*h*) Entrenching. (*i*) Attack of entrenchments with service ammunition. (*j*) Fortress operations. (*k*) Operations in conjunction with the navy, including the Danube flotilla.

French Infantry Training (Décret du 3 décembre 1904 portant réglement sur les manœuvres de l'infanterie). Official. 106 pp. 8vo. Paris, 1909. Lavauzelle. 1/-.

The last edition of this book was published in 1904, and presumably the present edition has been produced owing to the fact that the 1904 edition is exhausted. The two editions are word for word the same with the following exception:—Page 15, line 11.

In the original 1904 edition it was laid down that recruits were expected to be fit for service by the 15th March in each year. This was amended by a subsequent War Office order which is now cancelled and the original text of 1904 restored.

Problems in Tactics and Fortification (Thèmes de Tactique et de Fortification). By Captain R. 130 pp. 8vo. Angoulême, 1908. Imprimerie militaire du Sud-Ouest. 1/8.

In this small book are to be found exercises in entraining and detraining, tactical problems, and exercises in field fortification.

These problems originally appeared in the review "L'armée moderne," and were prepared with a view to assisting officers to study for the Staff College. They deal with the various situations in which a force might find itself in war, and each problem is followed by a well-reasoned solution.

Elementary Military Training. By Lieut.-Colonel A. W. A. Pollock. 182 pp. 8vo. London, 1908. Clowes. 4/-.

The author has had much experience in training young soldiers, both with his regiment and when in command of the "Spectator" company; many of his methods have therefore a practical value. It is, however, impossible to accept all his conclusions and criticisms without reserve.

Mistakes in the Solving of Tactical Problems. By Lieut.-Col. J. Layland Needham. 66 pp. 8vo. London, 1909. Rees. 1/6.

This is the second edition of this little work. It is a useful collection of the more frequent mistakes committed by candidates in the tactical papers set in examinations for promotion, as pointed out by the examiner in their reports, with explanatory notes by the author.

The example of orders given on pages 65-66 is not quite in accordance with Field Service Regulations, Part I., which has been issued since the publication of this book.

The Franco-German War, July 15th to August 18th, 1870. By T. M. Maguire. 82 pp., including 4 maps and 2 appendices. 8vo London, 1909. Clowes. 4/-.

This book is intended to assist officers in preparing for the Promotion Examination in Military History, and covers the selected period. Notwithstanding the shortness of this period, the author has curtailed the volume by dismissing the battles of Woerth and Spicheren in four pages, and referring readers to other works for further details. The battles of Colombey, Vionville, and Gravelotte are dealt with at rather greater length, but in a somewhat perfunctory manner.

FORTIFICATION AND MILITARY ENGINEERING.

Armour in Fortifications (Fortification cuirassée). By Lieutenant Colonel L. Piarron de Mondésir. 360 pp. 8vo. Paris, Octave Doin. 4/2.

The author traces the effect of the introduction of melinite more than 20 years ago, and shows how metal has come to be employed in fortifications, in order to furnish protection to the guns and gun detachments, and to observation parties and sentries. The book is divided into two parts, the first of which deals with the improvements in weapons in the 19th century, and the effect produced by these on fortifications. The second part deals with the employment of armour in fortifications at the present time in France.

Engineer Field Service Regulations (*Provisional*) (Instruction pratique provisoire du 8 Juin 1897 sur le service du génie en campagne). Official publication issued by the French War Office. 297 pp. 8vo. Paris, 1909. Lavauzelle. -/11.

This is the fourth edition of this publication, the previous edition having appeared in March, 1906. The present edition professes to be corrected up to October, 1908, but as a matter of fact it is verbatim the same as the last one, except that after the heading of Section xvi. (page 193), which deals with the railway service in war, a note is inserted to the effect that there is a duplicate Section xvi., which is a confidential document.

A Treatise on Permanent Fortification (Etude sur la Fortification Permanente). By General Dupommier. 56 pp., with 1 plate. 8vo. Paris, 1907. Berger-Levrault. 1/8.

This book contains four chapters dealing respectively with the *rôle* generally played by permanent fortifications, with "forts d'arrêt," fortifications as a means of protection, and "covering" fortifications.

MEDICAL.

Medical Service and Sanitary Duties in the German Army (Sanitätsdienst und Gesundheitspflege im deutschen Heere). By Generalarzt u. Inspekteur Dr. A. Villaret, and Generalarzt Dr. F. Paalzow. 160 pp. 8vo. Stuttgart, 1909. Ferdinand Enke. 4/-.

This is the first volume of a manual for the instruction of army medical officers on the active list or reserve in all matters connected with the duties of the army medical service in time of peace. It will be completed in six volumes, the last of which is promised by the end of September at the latest. Field medical organisation and duties are not to be included. Both authors occupy high and responsible positions on the active list of the German Army, and they have a long list of contributors who are also on the active list of the Army. The object of their publication is to help officers who from one cause or another may have got out of touch with the various regulations, to make themselves acquainted generally with their duties when they return to routine work.

The present volume contains only two out of the nine chapters of which the complete work will be composed. The first chapter is a history of the development and organisation of the army medical corps. and the second explains the various duties connected with recruiting and voluntary enlistment. Chapter III. will contain sections on the hygiene of barracks, clothing and equipment, rations, examination of food supplies, and general hygiene of military service. Chapter IV. is to deal with the supply of medical and surgical stores; Chapter V. with the medical service in regiments, including medical attendance on soldiers' families, officers, prisoners. etc.; Chapter VI. with medical duties in military hospitals; Chapter VII. with special medical treatment; and Chapter VIII. with invaliding. Chapter IX., which is to complete the series of volumes. deals with reports and statistics. The handbook generally appears to be modelled on lines similar to those of the well-known handbook on the Austro-Hungarian army medical service, by Dr. Paul Myrdacz.

War with Disease. 5th edition. By F. F. Maccabe. 120 pp., with index. 8vo. London, 1909. Baillière, Tindal and Cox. 1/-.

Dr. Maccabe's volume is well known amongst officers of the Army. In its original form it consisted of a series of four lectures delivered to the Cavalry Brigade at the Curragh in 1906; to the present edition is added a fifth lecture, given to recruits of the cavalry at Dublin and the Curragh, and two lectures on first aid and prevention of disease, arranged originally for the ambulance section of the South of Ireland Imperial Yeomanry, of which the author is the medical officer. Dr. Maccabe also answers some criticisms of previous editions in a short appendix.

It is unnecessary to examine too closely the matter of a series of lectures which are intentionally popular, and in which, in order to make his points more impressive, the author has in several instances wandered away from strict scientific and historical fact. These shortcomings will not prevent officers who read and follow his advice from doing very much towards keeping both themselves and their men fit. Dr. Maccabe's volume may well take its place in military libraries amongst the numerous other volumes that are now published with that object in view. The language is clear and to the point, and there will be no difficulty in following the author's meaning in his endeavour to initiate laymen into the mysteries and causes of disease, and to explain to them the methods of disease prevention.

A Course of Lectures on Military Hygiene (Cours d'hygiène militaire). By Monsieur G. Mathieu, Médecin-Major in the French Army. 350 pp. 8vo. Meulan-Hardricourt, 1906. Maréchaux. 3/2.

This volume consists of a series of lectures delivered at the French Military School of Versailles in 1904, 1905, and 1906 to the young candidates for commission in the French artillery and engineers on the subject of military hygiene. The value of such instruction requires no explanation, and these lectures appear to contain much that is likely to be useful in aiding officers to take care of the health of their men in peace and in war.

Précis of Military Hygiene (Précis d'hygiène militaire). By Dr. Monéry, Méd. Aide-Maj. 1st Cl. 216 pp. 12mo. Paris, 1908. Lavauzelle. 2/8.

This *précis* is written as a "cram" book for officers who are candidates for admission to the French Staff College and for appointment to the General Staff. It is in two parts, Part I. dealing with military hygiene in peace, and Part II. with field hygiene. It contains chapters on physical education and training of the soldier, personal hygiene, food, clothing, equipment, alcoholism, venereal diseases, hygiene of barracks, disinfection, methods of purifying water, the importance of hygiene in the field, diseases of armies in campaigns, field rations, or accessories to rations (coffee, tea, chocolate, alcohol, sugar, kola), on the hygiene of transport by rail, hygiene of marches, hygiene of billeting, of camps and of bivouacs, first aid to the wounded, and the sanitation of battlefields. The volume is interesting as showing the extent to which General Staff officers of the French Army are expected to study hygiene. It is not quite up-to-date from a scientific point of view, as, for example, in the statement that Malta fever is due to contagion from polluted soil and fœcal matter, and that for the prevention of yellow fever it is necessary to disinfect baggage, clothing, and bedding, and that white races acquire immunity from an attack of the disease by prolonged residence in the yellow fever zone.

The Red Cross in the Far East. Bulletin No. 2 of the Red Cross Society of Japan. 75 pp., with chart and 7 photographs. Tokyo, 1908. Not on sale.

The report of the Japanese Red Cross Society, which has just been issued in English, is interesting reading. It gives a concise and clear account of the organization and work of the Society, including the complete text of its regulations for relief service in time of war and of calamities. The former regulations are in fourteen chapters and 93 articles, the latter in three chapters and 12 articles. They embody clear practical instructions for the organization and use of voluntary aid and for its work in war as an auxiliary to the medical services of the army and navy. The bulletin contains several short notes on relief work in Formosa, ambulance service in Tokyo, honours and rewards, description of local Red Cross hospitals, and Baron Ozawa's impressions of the International Conference of Red Cross Societies in London in 1907. There is an interesting table of the distribution of membership in the Empire, and an instructive chart showing the organization of the Society. The Society has ready for war in organized detachments 4 directors, 237 physicians, 141 apothecaries, 84 clerks, 5 assistant apothecaries, 262 chief female nurses, 89 chief male nurses, 3 chief stretcher bearers, 2,323 female nurses, 572 male nurses, and 131 stretcher bearers. The relief detachments, as they are called, are formed of 2 medical officers, an apothecary, a clerk, 2 chief nurses and 20 nurses, and are intended for taking over the charge of 100 patients in military hospitals. They are mobilized by order of the Minister of War or of the Navy, and carry out such work as is entrusted to them by the military or naval authorities. The stretcher bearers are organized into a transport column capable of transporting 30 patients, the composition of the column being 1 director, 1 medical officer, 1 clerk, 2 chief male nurses, 3 male nurses or sick attendants, 3 chief stretcher bearers, and 120 stretcher bearers.

The total membership of the Society is 1,397,344, or one in every 38 of the population of Japan. This proportion is very evenly maintained throughout all the provinces of the Empire.

The Japanese Red Cross Society may justly be regarded as the model of what a Red Cross Society should be, in that it is ready without confusion and in the simplest possible manner to take over the ward duties of the regular medical service in all the large garrison hospitals of the country, and thus set it free for duty with the field army. Its organization and work have been evolved out of the practical experience of three wars.

"Pappatacifever," a Three-Day Fever Endemic in the Adriatic Littoral Districts of Austria-Hungary. (Das Pappatacifieber. Ein endemisches Drei-Tage Fieber im Adriatischen Küstengebiete Osterreich-Ungarns.) By R. Doerr, K. Franz and S. Taussig. 166 pp., with 2 microphotographic prints and 1 chart. 8vo. Leipzig and Vienna, 1909. F. Deuticke.

In this work are published the initial results obtained by a Commission of Army Surgeons appointed by the Austrian War Office to investigate a form of fever which was giving rise to anxiety on account of the large amount of sickness and inefficiency which it occasioned among the troops quartered in certain parts of Herzegovina and Dalmatia.

This fever, which had long been known to the inhabitants of these countries, had been variously considered to be due to malaria, influenza, typhoid fever, gastric catarrh, or to the effects of exposure to the sun. It occurred only in the summer months from May to October, and newcomers were almost inevitably attacked. Although the fever only lasts three days, the after effects are severe, and sufferers are, as a rule, totally incapacitated for 8 to 14 days. As many as 30 per cent. of the strength of a unit have been incapacitated at one time, and the disease has therefore interfered gravely with the execution of military duties.

Taussig, on epidemiological grounds, had thought it might prove to be caused by the bites of a minute "sand-fly," whose numbers and distribution he had found to correspond closely with the occurrence of cases of this fever, in point of time and locality, and the work of Doerr and his colleagues, as recorded in this book, has clearly established the correctness of Taussig's hypothesis, and has proved that the virus of the fever is transmitted to man through the bites of this fly, the *Phlebotomus papatasii*.

Doerr's experiments upon medical men and other volunteers showed that the blood taken from a patient in the first day of the fever, if injected into a healthy man, would produce a typical attack, after the usual incubation period. No germs could be isolated from the blood nor could any be seen on microscopic examination; on this account, and as he was able to prove that the virus could pass through a fine-grained filter, Doerr considers that it belongs to the class known as "invisible" or "ultra-microscopic" organisms.

Experiments carried out with the flies themselves were also successful; thus, a number of the flies were caught and allowed to feed upon a patient suffering from the fever and were then transported to Vienna, where the disease does not occur. They were then permitted to feed once more upon healthy volunteers, 50 per cent. of whom contracted the fever and went through typical attacks. These experiments further showed that the flies do not become infective until eight days after they have fed upon fever blood, which points to the germ most probably belonging to the protozoa and requiring to undergo a regular developmental stage in the body of the fly.

No treatment has proved specific, and it is obviously a case for the elaboration of an effective system of prevention or prophylaxis. Doerr advocates certain measures, such as the isolation of the sick at a distance of 200 to 300 metres from barracks, the selection of sick attendants from those who have been rendered more or less immune by a previous attack, &c., but it is evident from the description that the problem is peculiarly difficult. The measures which have proved of such value in the case of malaria prophylaxis are, for various reasons, inapplicable here.

Knowledge of the life-history of the fly is still very incomplete. They infest low-lying and warm localities and enter the living rooms in swarms at night; the females only are blood suckers and they bite only in the dark and rarely out-of-doors. The bites may give rise to great irritation. The larvæ are considered by Grassi, who has written a monograph on the fly, not to be aquatic in their habit, but to develop in small collections of dirt or decaying rubbish, chiefly in latrines and privies kept in a badly ventilated and insanitary condition. Net-protection is unsatisfactory on account of the minute size of the fly necessitating a material so closely woven as to render a sleeping room almost unendurable on a hot night.

A somewhat similar fever is known to be prevalent among the British garrisons of the Mediterranean, and Lieutenant-Colonel Birt, R.A.M.C., has recently been sent to Malta to investigate the subject in the light of the above work of the Austrian Army surgeons.

Hygiene in the Colonies: with Special Reference to Indo-China. (Hygiène coloniale appliquée. Hygiène de l'Indo-Chine). By Dr. Charles Grall, Médecin Inspecteur, French Colonial Army. 500 pp., with 4 photographs and 73 diagrams. 8vo. Paris, 1908. Baillière. 10/-.

This work deals with the question of military hygiene in the tropics. The author goes into considerable detail on many and varied subjects, viz., rains, water, climate, soil, food, clothing, customs, cleanliness, different diseases, latrines, barracks, &c. He has had considerable experience, and has produced a book which should be of value to nations which have colonial armies, especially when these troops are serving in tropical climates.

ORGANIZATION AND ADMINISTRATION.

The Royal Prussian War Ministry, 1809-1909 (Das Königliche Preussische Kriegsministerium 1809-1909). 458 pp., with numerous portraits. 4to. Berlin, 1909. Published by the Prussian War Ministry. 25/-.

This book is published in commemoration of the centenary of the Prussian War Ministry.

In addition to its merely historical value it contains much which is of interest from the point of view of army organization. In this respect the second chapter, pp. 29-140, which gives a detailed description of the measures taken for the mobilization of the Prussian Army in 1866, is perhaps the most interesting; pp. 158-178 contain a history of small-arms during the last 100 years, concluding with descriptions of the '98 rifle and ammunition; pp. 179-207 are a treatise on the development of power-traction vehicles, concluding with the conditions under which bounties were recently offered to private firms for constructing and maintaining motor vehicles suitable for use in war.

Two chapters are devoted to the history and organization of the departments dealing with equipment and supply, and two chapters to the organisation of institutions for sick and invalid soldiers; a list of the latter institutions is given at the end of the book.

Attention is drawn to the following tables, which will be found useful for reference:—

> Page 28, Table showing organisation of the War Ministry. Pages 117, 125, Tables of strengths on which the mobilisation of 1866 was based. Page 422, Composition of the Prussian Army at the present date.

In addition, the book contains portraits of King Frederick William III., in whose reign the War Ministry was founded; of Scharnhorst, to whom it may be said to have owed its origin; and of many other generals who have filled the positions of War Minister or Chiefs of Sections in the Prussian War Ministry.

BOOKS OF REFERENCE.

The Territorial Year Book. 294 pp. 8vo. London, 1909. Hodder and Stoughton. 2/-.

This book deals primarily with the constitution, organisation, administration, and distribution of the Territorial Forces, but there is also a considerable amount of up-to-date information on matters of general military interest.

It contains lists of the Military Forces of the Crown, the principal ships of the Royal Navy, divided according to classes, regiments of the Army, with historical notes, Territorial units and county associations.

Maps have been supplied showing the division of England, Scotland, and Wales into Territorial commands, districts, etc., and coast-defence zones.

It will be found a useful and interesting publication by all, but especially by members of the Territorial Force.

The Armed Forces of the Austro-Hungarian Monarchy (Das Heerwesen der österreichisch-ungarischen Monarchie). 11th edition. By Lieut.-General Karl Glückmann. 368 pp., with 1 map. 4to. Vienna, 1909. Seidel. 5/-.

The above is the annual edition of an extremely useful handbook. The work appears usually in May, but owing to recent events the publication this year has been expedited.

As in most Austrian handbooks, war organisation is scantily dealt with, but few details are wanting in regard to peace arrangements and the system of organisation generally.

Servia by the Servians. Edited by Alfred Stead. 366 pp. 8vo. London, 1909. Heinemann. 12/6.

This work consists of a series of articles by prominent Servians on the history, ethnography, government, religion, military and civil institutions, material resources, etc., of their country. As the writer of each article is an expert on the subject about which he writes, the book should prove valuable as a general book of reference on Servia.

TRAVEL AND TOPOGRAPHY.

In Viking Land. By W. S. Monroe. 332 pp., with numerous illustrations and an Index. 8vo. London, 1908. Bell. 7/6.

This book is a general account of Norway and the Norwegians, written in a popular form. It contains chapters on the geography, history, constitution, ethnography, art, literature, educational system, and architecture of the Norse race. As regards the Norwegians of to-day, the author remarks that their most marked characteristics are clear insight, honesty, unconquerable pertinacity, and a sturdy sense of independence. Their opinions are formed deliberately but adhered to tenaciously.

The appendix contains some useful hints for travellers in Norway.

Problems of the Middle East. By Angus Hamilton. 480 pp., with 2 maps. 8vo. London, 1909. Eveleigh Nash. 12/6.

This volume is the result of journeys which the author made, and contains suggestions in respect to the Baghdad Railway, the Hejaz Railway, and the British sphere in Persia.

On the Frontier of Central Asia (На Границахъ Средней Азіи). By D. H. Logofet. 3 vols. 661 pp., with 2 maps (1 coloured) and illustrations. 8vo. St. Petersburg, 1909. Berezovski. 7/10.

The author accompanied the inspecting general in a tour along the cordon of posts of the Trans-Caspian and Amu Daria Brigades of the Frontier Guard. The first volume deals with the Persian frontier from Chikishlyar to Zulfikar. In the second volume the author describes his journey along the Afghan frontier from Zulfikar, by Kushk post to the post of Karaul Khana on the Murghab, then by the Central Asian Railway from Sariyazi on the Kushk branch by Merv to Charjui, by steamer up the Amu Daria to Kerki, and by the Kara Kum posts and Kelif to Termez. The third volume describes the journey from Termez up the right bank of the Amu Daria to Shaugon, south-west of Kila-i-Khum. From Shaugon to Khorogski, the right flank post in the Pamirs, there is a gap of 233 miles without frontier guard posts.

The book gives an interesting description of the conditions of life on the Russian frontiers in Central Asia. It is possible that life on the Atnek, south-east of the Caspian and in the Kara Kum posts, south-west of Kerki, is even more lonely and less attractive from the sybarite's point of view than a tour of duty in the outposts of our north-west frontier in India. Still, one can only feel that British officers similarly placed would try harder to adapt themselves to their surroundings, and would drink less and complain less. Sport in some form or other is everywhere obtainable. The Murghab is covered with wild fowl. No less than 50 tigers are killed every year on the Amu Daria. Skirmishes with raiders are frequent in some parts of the line. The Russian officer in the Frontier Guard seems often to be a married man, and naturally the rough life in a frontier outpost is trying for a wife and family. He seems to be ignorant generally of the local languages, and this fact in itself deprives his life of half its interest.

The Short Cut to India. David Fraser. 381 pp., with 90 illustrations, maps and sketches. 8vo. Edinburgh and London, 1909. Blackwood. 12/6.

This is an entertaining and instructive account of a journey along the route of the Baghdad Railway. The chapter dealing with the railway convention, and the last four chapters dealing with the route of the railway, the population question, mail contract and gulf shipping, and the general question of the railway are of peculiar interest from a military point of view.

Travels in Western South America, 2 volumes (Reisestudien aus dem westlichen Südamerika,. Princess Theresa of Bavaria. About 800 pp., with 6 maps and 167 illustrations and engravings. 8vo. Berlin, 1908. Dietrich Reimer (Ernst Vohsen). 20/-.

An interesting description of travels in South America, extending over six months, and carried out in 1898. The main object of the expedition was research in geology, botany, and natural history, and the Bavarian Princess appears to be well equipped as regards scientific knowledge for such an undertaking. The chief military interest of the work lies in the descriptions of the inhabitants of the various countries, the troops seen, the physical features of the districts traversed, the climate, the railways utilised, and the existing means of transport.

The Bavarian Princess was much struck with the progress of German commerce and influence in South America, which have made great strides of recent years. Her impression appears to be that Germany is already ahead of Great Britain in most countries of South America, and is rapidly outstripping us in the remainder.

MISCELLANEOUS.

Submarine Cables (Die Seekabel). By H. Thurn. 288 pp., with map and 105 illustrations. 8vo. Leipzig, 1909. Hirzel. 9/-.

This is a useful popular account of submarine telegraphy by a German postal official. The first chapter deals with the instruments and apparatus for laying and working a cable; the second is historical; the third is entitled: "The necessity for Germany possessing submarine cables of her own and the limitation of the English cable monopoly"; the fourth gives an account of the German submarine cable lines, and cable manufacturing companies; the fifth, the management of cable traffic; the sixth, the importance of submarine cables for business, political and strategic purposes, and plans for the future. In discussing the latter, the writer complains of the "stage of stagnation into which the German cable-laying policy has fallen," although it has already accomplished "much that is beautiful." He insists that Germany "must have her own network of cables connecting her with all important oversea countries, and independent of the help of foreign States." The statistics of the various telegraphic companies which the writer gives are, however, hardly encouraging to an investing public.

The seventh chapter deals with the competition of wireless telegraphy with submarine cables; the eighth, the international and municipal laws for the protection of cables; the ninth, cables in war and neutrality.

From the facts given by the writer there would appear to be little cause to complain of want of progress in the schemes for providing Germany with her own network of cables. In 1898 Great Britain owned 208,747 miles of submarine cables, in 1908 253,898 miles, while between the same dates German cables increased from 6,186 miles to 29,600 miles (including two cables to the United States), and since that date Germany has acquired landing rights at Teneriffe, and is laying a cable thence to Brazil, so that messages from Germany to South America will no longer be necessarily sent over English or French lines.

The Evolution of the Army. Part III. Wishes and Grievances of Officers (L'Armée évolue. Désirs et Plaintes des Officiers). By General Pédoya, formerly commanding XVth Army Corps. 131 pp. 8vo. Paris, 1909. Chapelot. 2/2. (For Part II., *see* No. 9, p. 103.)

This is the latest of the series of volumes on the evolution of the French armies, which is being produced by General Pédoya. In this volume the writer shows very clearly the restrictions and disabilities which weigh so heavily on the French officer. For example, he is liable to be placed under arrest for the most trivial errors; if he is unmarried he lives practically always under the surveillance of his superiors; he cannot marry without permission; he can get but little leave, and that at most inconvenient times; he is not allowed to have the smallest interest in any commercial enterprise, and he may not publish anything, except under a pseudonym, without the authority of the War Office. The main grievances of French officers, however, are those connected with their pay, pension, and promotion. *Apropos* of pay, General Pédoya gives an interesting table showing the rates of pay of French and German officers. From this it can be seen that in every rank the latter receive considerably more pay than French officers. As regards pensions, French officers have to contribute 5 per cent. of their pay to the pension fund to obtain a pension. The stagnation in promotion is indeed alarming. The writer suggests that the American plan of superannuating a large percentage of old and infirm officers should be adopted.

In conclusion, General Pédoya says that it is now so generally recognised how poor the position of a French officer is as compared with his civilian compatriot, that it will shortly be difficult to get officers at all.

The Modern Officer (L'officier d'aujourd'hui). By Guy Roland. 250 pp. 8vo. Paris, 1909. Lavauzelle. 3/-.

This is a good picture of the life of a French officer at the present day. The author sketches the career of a young officer from the time he joins his regiment, and shows very clearly the many difficulties which he has to encounter and the small amount of encouragement which he receives. In France, as in England, the pay of the officer is extremely low, though the expenses of a French officer are less than those of his British comrade. However, there is no lack of candidates for commissions as yet, owing to the fact that in France compulsory service causes the Army to occupy a high position in the eyes of the nation. M Roland is of opinion, though, that the class of officers is no longer quite as good as formerly. owing to the democratic tendencies of recent French Governments and the low rate of pay, which makes it impossible for men without private means to keep up their position in society. He complains that the real mission of the Army, viz., European warfare, is neglected, and that the Army is merely looked upon as an instrument for repressing strikes and fighting small wars in the Colonies. The book concludes with a plea for a more just and reasonable treatment of the Colonial Army.

"*More Japonico.*" By James S. de Benneville. 600 pp. 8vo. Yokohama, 1908. Printed by the "Japan Gazette." 12/-.

This work deals with the evolution of Japanese character and customs, and for purposes of comparison examples are taken from the history of other nations. It begins with a general account of Japan from earliest times, and subsequent chapters are devoted to such subjects as the internal communications of the country and their effect on its development; to religion and philosophy, commercial expansion, politics, the status of women, etc. The book contains much of interest, but its title is somewhat misleading, as Japan occupies but a small portion of its space.

German Secret Service in France (L'espionnage allemand en France). By Paul Lanoir. 250 pp. 8vo. Paris, 1908. Cocuaud and Co. 3/-.

An interesting work, showing the organisation, ramifications, and working of the German secret service system from 1848 up to the present day, with special reference to the methods of Stieber. This extraordinary man, for many years head of the Prussian secret police, organised a most efficient system of spies in Austria and France before the campaigns of 1866 and 1870 respectively, and the work of these agents contributed in no small degree to the success of the Prussian and German Armies in these wars.

The author goes very deeply into the German methods of secret service, and the information given by him is of considerable value, as it shows the thoroughness of the German system, and the length to which Germans are prepared to go when they require intelligence about a country on which they intend to make war. The details of present-day German methods are most instructive, and the book is well worth reading.

Manufacture of Explosives. Twenty Years' Progress. By O. Guttmann. 69 pp., with 11 illustrations, 2 appendices, and index. 8vo. London, 1909. Whittaker. 3/-.

These four lectures delivered before the Royal Society of Arts at the end of 1908 deal for the most part with technical questions of manufacture. though the history of the subject is lightly touched upon, they can hardly be said to be of interest to the general military reader. At the Royal Gunpowder Factory, Waltham Abbey, improvements in the manufacture of nitro-glycerine and guncotton, devised by the superintendent and his staff, have been introduced, and descriptions of these will be found in Mr. Guttmann's lectures, who examines closely into their advantages.

The author, at the conclusion of his last lecture, makes a prophecy as to what will be the composition of the military powder of the future.

Mr. Guttmann is a well-known authority on the subject he deals with, to which his lectures are a valuable contribution.

Indian Financial Statement for 1909-1910. Parliamentary Blue Book. 242 pp. Fo. London, 1909. 2/-.

The Financial Statement of the Government of India, published this year, is of particular military interest for two reasons—the current financial year 1909-10 is the first "lean year" since the inauguration of Lord Kitchener's reorganisation and redistribution schemes, and secondly, the expenditure on these schemes, which has hitherto been treated as "Special," has now been merged in the ordinary Budget.

In Appendix II. (page 91) of the Statement will be found a clear explanation of the position of affairs as regards Army finance for the two years, 1908-09 and 1909-10.

Dealing first with the "Special" expenditure for 1908-09, it will be seen that the revised estimates for the year show a decrease of £403,400 as compared with the sum budgetted for. This lapse is due to the postponement of certain measures or inability to carry them out to the extent anticipated and the necessity of restricting expenditure in view of the general financial situation. Thus the outlay on the following items fell short of the sums allotted to them:—

(i.) Reorganisation of Horse and Field Artillery Ammunition Columns—the completion of five columns has been deferred till 1909-10.

(ii.) Construction of lines for Indian troops—the original programme was reconsidered and considerably reduced.

(iii.) Working expenses of ordnance factories—these were arbitrarily restricted.

(iv.) Increase to the Indian Army Reserve—new enrolments were fewer than anticipated.

(v.) Addition of 350 British officers to the Indian Army—the full number of sanctioned appointments were not filled.

In addition to these a lump sum was also provided for certain other projects which were not carried out or for which payment was not demanded.

A certain proportion of the lapses, however, were diverted to other objects, and funds were allotted to the purchase of rifles and Maxim guns and binoculars in England; the delocalisation and transfer to India of a Burma battalion and the establishment of a Chemical Bureau connected with the manufacture of cordite.

The increased charges entailed by the raising of the pay of the Indian Army from the 1st January, 1909, were also met from the above savings. Thus, as mentioned above, it was found possible to reduce the total lapse in the "Special" grant to £403,400.

The Budget Estimate for 1909-10, under the four military heads "Army," "Marine," "Military Works," and "Special Defences," amounts to £20,708,200 (including provision for measures which have hitherto been shown under "Special), and thus shows a decrease of £46,200 as compared with the Budget of 1908-09.

"Marine" charges remain practically the same.

"Military Works" charges and expenditure on "Special Defences" show very considerable decreases.

"Army" expenditure shows an increase at home of £354,700, and in India of £23,700. The increase in home expenditure is attributable to the extra charge now paid to the War Office, increased furlough allowances, larger store demands, and the normal growth of non-effective charges.

The increase of expenditure in India is due mainly to the increased pay and allowances given to the Indian Army and to the rise in prices of food and forage.

In order, therefore, to provide funds for the increased charges under "Army," it has been necessary to restrict expenditure on new measures as much as possible in the coming year.

Allotments have, however, been made under "Military Works" and "Special Defences" for carrying on works already in progress, and provision has been made under "Army" for further expenditure on the following important measures:—

(*a*) Completion of the eight Horse and Field Artillery Ammunition Columns.
(*b*) Rearmament of Horse and Field Artillery.
(*c*) Increase, Indian Army Reserve.
(*d*) Establishment of young stock (Remount) depôt at Sargodha.
(*e*) Increase of reserves of rifles and Artillery ammunition.
(*f*) Expansion of dairies.
(*g*) Revised scale of medical and surgical equipment.

The general character of the Budget for 1909-10 may be summed up in the words of the Finance Member of the Government of India: "The Army has taken its full share in helping us to face a lean year."

Army Reform and other Addresses. By the Rt. Hon. R. B. Haldane, K.C., M.P. 312 pp. 8vo. London, 1907. Fisher Unwin. 2/6.

This is a reprint of speeches by the Secretary of State for War, and includes three on Army Reform delivered in the House of Commons, three on Fiscal Policy, one on Modern Logicians and Economic Methods, and the Rectorial Address delivered to the Students of the Edinburgh University in January, 1907.

The Conventions and Customs of Duelling (Die konventionellen Gebräuche beim Zweikampf). By Colonel von Spohn. 60 pp. 4to. Berlin, 1909. Eisenschmidt. -/9.

This is a handbook of the customs and etiquette of duelling for the use of officers of the German Army. The author classifies the different degrees of provocation, which may give occasion for a challenge, under three heads, viz., (1) *simple* (*e.g.*, discourteous conduct); (2) *aggravated* (*e.g.*, abusive language); and (3) *extreme* (*e.g.*, a blow). It is important in each of these cases to understand which is the party insulted, as it is he who has the right of challenging. Thus, if the victim of abusive language (case 2) retorted with a blow, the recipient of the blow would then become the insulted party, and would have the right to challenge. Any further interchange of blows would not, apparently, affect the situation. Duels may be fought either with swords or pistols. Of the latter class of duel six different methods are generally recognised: (1) firing from a fixed point, within a given interval of time from the signal; (2) as above, but with no time limit; (3) firing while advancing; (4) advancing and halting to fire; (5) firing while moving on parallel lines; (6) firing at a given signal.

The book also contains specimen forms for the use of seconds when arranging duels, and for the reports which have to be made to the Court of Honour before the duel can take place.

Extracts from Prussian Army Orders dealing with duels and Courts of Honour are given at the end of the book.

German Troopers in South-West Africa (Deutsche Reiter in Südwest). By Lieut.-General Freiherr von Dincklage-Campe. 480 pp., with numerous portraits, illustrations, and sketches. 4to. Berlin, 1909. Bong. 15/-.

The author has induced a number of participants in the suppression of the recent rebellion in German South-West Africa to describe their experiences.

These narratives are collected in the large volume under review, which thus contains much interesting, though possibly somewhat exaggerated, first-hand evidence on the events of the Herrero war. Each article is signed by the narrator.

The vivid recitals in the letterpress are illustrated by numerous admirable pictures of an equally vivid and imposing character.

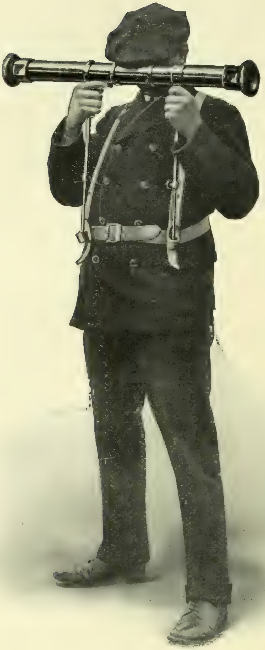
Lessons from 100 *Notes made in Peace and War.* By Major-General E. A. H. Alderson. 128 pp. 8vo. Aldershot, 1909. Gale and Polden. 2/-.

> "When you see a thing done, either good or bad, which gives a lesson for the future; when you hear, when you read, when you think of a thing, and even when you dream of a thing, jot it down at *once*, though it entails striking a light at three o'clock in the morning. Be assured that the same good ideas, like good opportunities, do not often come twice over."

This note, on which the author has acted, explains the origin of this collection of notes, which are now published in the hope of benefiting others. The book covers a wide field, and contains much sound advice and excellent ideas, which are only too apt to be forgotten or overlooked.

(To be continued.)

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA



THE BARR AND STROUD RANGEFINDER

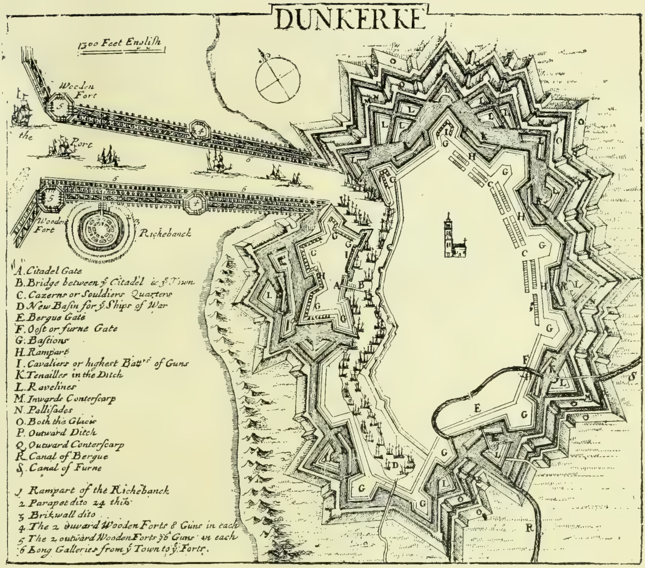
"F.T. TYPE." 26½ INCHES BASE.

For use with Cavalry, Artillery and Infantry, also for Navigational purposes on board ship.

Approximate uncertainty of observation:—

1 yard at 400 yards.
9 yards ,, 1,000 ,,
40 ,, ,, 2,000 ,,
230 ,, ,, 5,000 ,,

BARR AND STROUD,
ANNIESLAND,
GLASGOW.


DUNKERKE
1300 Feet English
Wooden Fort
the Port
Wooden Fort
Richebanck
A. Citadel Gate
B. Bridge between ye Citadel & ye Town
C. Cazerns or Souldiers Quarters
D. New Baſin for ye Ships of War
E. Bergue Gate
F. Ooſt or furne Gate
G. Baſtions
H. Rampart
I. Cavaliers or highest Battrs of Guns
K. Tenailles in the Ditch
L. Ravelines
M. Inwards Conterſcarp
N. Palliſades
O. Both the Glacis
P. Outward Ditch
Q. Outward Conterſcarp
R. Canal of Bergue
S. Canal of Furne
1 Rampart of the Richebanck
2 Parapet dito 24 thik
3 Brikwall dito
4 The 2 inward Wooden Forts 8 Guns in each
5 The 2 outward Wooden Forts 36 Guns in each
6 Long Galleries from ye Town to ye Forts.

OLD PRINT OF DUNKIRK,

circa 1620, in the possession of the Royal United Service Institution.

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. OCTOBER, 1909. No. 380.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

ERRATUM—SEPTEMBER JOURNAL.

Page 1227, line 46, *for* "**Dufaure de Lajarte**" *read* "**Marin-Darbel.**"

Second-Lieutenant R. W. Russell, West Riding Regiment.
Lieutenant O. Wilkin, Devonshire Regiment.
Captain H. D. Belgrave, Royal West Kent Regiment.

II. ADDITIONS TO THE MUSEUM.

(6023.) A Snuff Box, taken from the pocket of a French Officer who fell at the battle of Vimiera, 21st August, 1808. The box bears the following inscription : " Liberté des Mers ésperance de tous les Peuples."—*Given by Major-General C. J. Horne.*

(6024.) A Water-colour Painting of " The Kwaja Pass, Afghanistan," showing the Force under Lieut.-General Sir Donald Stuart, 1878.—*Painted and Bequeathed by Lieut.-General Sir R. H. Sankey, K.C.B., R.E.*

(6025.) Shoulder-belt Plates of the 1st Royal Scots, 11th Foot, and 93rd Highlanders.—*Given by Lieut.-Colonel A. Leetham, F.S.A. (Curator).*

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

Vol. LIII. OCTOBER, 1909. No. 380.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

The following Officers joined the Institution during the month of September :—

Captain F. J. W. Harvey, R.M.L.I.
Captain M. G. Heath, the Queen's Royal West Surrey Regiment.
Second-Lieutenant W. Walbeoffe-Wilson, 3rd Monmouthshire Regiment.
Lieutenant N. W. Benton, R.E.
Captain Hon. W. G. S. Cadogan, M.V.O., 10th Hussars.
Major C. R. Ballard, Norfolk Regiment.
Captain T. R. Badger, 12th Lancers.
Lieutenant A. F. St. C. Armitage, R.N.
Commander T. S. Price, Cape Colonial Division, R.N.V.R.
Lieutenant N. C. S. Simson, R.G.A.
Second-Lieutenant R. W. Russell, West Riding Regiment.
Lieutenant O. Wilkin, Devonshire Regiment.
Captain H. D. Belgrave, Royal West Kent Regiment.

II. ADDITIONS TO THE MUSEUM.

(6023.) A Snuff Box, taken from the pocket of a French Officer who fell at the battle of Vimiera, 21st August, 1808. The box bears the following inscription : " Liberté des Mers ésperance de tous les Peuples."—*Given by Major-General C. J. Horne.*

(6024.) A Water-colour Painting of " The Kwaja Pass, Afghanistan," showing the Force under Lieut.-General Sir Donald Stuart, 1878.—*Painted and Bequeathed by Lieut.-General Sir R. H. Sankey, K.C.B., R.E.*

(6025.) Shoulder-belt Plates of the 1st Royal Scots, 11th Foot, and 93rd Highlanders.—*Given by Lieut.-Colonel A. Leetham, F.S.A. (Curator).*

(6028.) A Print in Colours of the British Swiss Legion, 1854-1856.—*Given by the Viscount Dillon, F.S.A., Curator of the Tower of London.*

(6029.) Cavalry Sword and Scabbard, 1908 pattern.—*Given by the Secretary of State for War.*

(6030.) Small Oil Painting of a Trooper of the 2nd Life Guards, with a camp in the distance, executed about 1820.—*Given by Colonel R. Mackenzie-Holden.*

III. ARMY PROMOTION LECTURES.

A course of eight Lectures in Military History on "The Russo-Japanese War," set for the December Army Promotion Examination, will be given on the following dates, at 4 p.m., the Lecturer being Mr. J. H. Anderson, F.R. Hist. Soc., Barrister-at-Law:—Tuesday, 9th November; Friday, 12th November; Tuesday, 16th November; Friday, 19th November; Tuesday, 23rd November; Friday, 26th November; Tuesday, 30th November; Friday, 3rd December.

The fee for the course of Lectures is one guinea for members of the Institution and two guineas for non-members.

Application to attend, enclosing the fee, to be addressed to the Secretary, Royal United Service Institution, Whitehall, S.W.

IV. LECTURES.

The Right Honourable Viscount Midleton will preside at the Lecture on 1st December:—"The Army as a Profession," by Major A. B. N. Churchill.

V. GOLD MEDAL ESSAY.

Officers who are competing for the 1909 Gold Medal are reminded that all essays must be received not later than 30th November.

VI. CHANGE OF ADDRESS OR RANK.

Notification of change of address or rank must reach this Office not later than the 7th of the month for correction for the following JOURNAL. Members are reminded that it is essential that such changes should be made in writing; if these changes are not notified, members will themselves be responsible if their JOURNAL fails to reach them through being wrongly addressed.

VII. ADMISSION TO LECTURES.

Members are reminded that they are able to introduce only two visitors to each Lecture. When the member does not attend himself, it is necessary that visitors should hand in his visiting card at the entrance.

THE PRESENT CONDITION OF SUBMARINE BOATS.

Translated from *Nauticus,* 1908, and reproduced by permission of the Editor of that Periodical.

Communicated by the Director of Naval Intelligence.

I. INTRODUCTION.

DURING the course of the last two years a substantial advance is to be noticed in the domain of the submarine, in that all the countries actively engaged in its development appear to have arrived at a certain conclusion. To-day there is a greater unanimity of opinion noticeable than was the case in 1906. There is a clearer conception as to what tasks fall to the new weapon, and how far these tasks, in the present condition of the industry, can be fulfilled and extended.

With sound uninfluenced development the final results must be approximately the same; there is evidence of this in the greater similarity of the modern types of individual countries in comparison with those of previous years. Utopians must postpone their ideas of an entire revolution in the domain of naval war and fleet politics to a later date. On the other hand, however, the new weapon has gained for itself friends amongst those who had hitherto looked on it with scepticism.

The experimental period may now be considered as finally left behind. The construction of a submarine is a compromise, as is that of every other war-vessel; the mutual dependence of individual factors is recognised, and consequently the individual peculiarities of the boats can be developed in a logical manner.

A further remarkable phenomenon of recent years is that the cloud of secrecy, which formerly surrounded the submarine-boat policy of the leading countries, has now been lifted to a considerable extent. This is principally due to the great interest taken by private firms in the building of submarines; by attracting suitable men and by experiments these firms soon arrived at results similar to those already obtained by the naval Powers. In America, the construction of submarines has always been in the hands of private firms (Electric Boat Co., Holland, Lake); in France and Italy, Chief Constructors Laubeuf and Laurenti, who were formerly in the service of the Government, have gone over to private firms; in Austria the firm of Whitehead have set up a submarine-boat yard at Fiume, in which Vickers also has a share. Since this latter firm, in conjunction with the Government, has quite recently been engaged in the development of English submarines, the results also of this new undertaking cannot but be influenced by English ideas.

The above-mentioned circumstances now permit those countries who have hitherto stood aloof from the submarine question to engage in the construction of such vessels without the danger of initial failure; they are, in fact, in a position to fix certain definite conditions, according to the special needs of each country, which the boat ordered must satisfy. Considerable use has recently been made of this possibility, namely, by Austria, Sweden, Norway, and Denmark; Turkey also intends to place orders with private firms.

To-day the submarine-boat finds a place in nearly every Navy —not as an experiment, but as a justified part of the national naval armament.

II. The Question of Type.

The progressive knowledge which has led to the introduction of the submarine as a weapon to be reckoned with in war has also brought with it a remarkable standardisation of its details of construction. The groping uncertainty evinced in the trial types of former (especially French) building programmes has given place to a logical development, which may be proved to exist not only within individual Navies, but also in the Navies of the world as a whole.

Certainly, the submarine is not at present such a thrashed-out conception as the battleship or cruiser. The levelling course of development, however, has already advanced so far that to-day the distinction, formerly considered fundamental, between the submersible and the submarine need scarcely be made; indeed, it is no longer possible to do so, partly by reason of the fact that owing to the disappearance of the differences, individual boats can no longer be assigned straight off to one of the two original types.

Fusion of the "Submersible" and the "Submarine."

The modern submarine—formerly purely cylindrical in section, with little or no outside constructions—has an extensive superstructure, which gives it better lines for surface work and increased seaworthiness and stability, in consequence of the alteration in form. At the same time, the reserve of buoyancy, *i.e.*, the buoyancy of the boat when on the surface, has been increased, as is shown in the following table, and approximates to that generally assigned to submersibles:—

Class.	Launched.	Reserve of Buoyancy.	
Naïade (French)	1901	5 per cent.	Submarines.
A Class (English)	1902	10 ,, ,,	
B Class (English)	1904	11 ,, ,,	
Émeraude (French)	1906	13 ,, ,,	
Octopus (American)	1906	15 ,, ,,	
Normal Submersibles	—	20 – 25 per cent.	

As characteristic of the submersible, there only remains, therefore, the stowing of the fuel and ballast tanks in the outer body instead of, as in the submarine, in the inner body. This distinction is also beginning to disappear, especially as now there are designs which, while placing the hot oil tank in the inner body, leave the ballast tanks wholly or partly outside, thus effecting a compromise. It may be confidently expected that in this respect also the submarine will in a measureable time adapt itself to the submersible, and thus be completely fused with it into one type. A further possibility certainly is that the inner and outer bodies will be successfully united, a ship-like shape given to the whole, and the superstructure correspondingly limited. Perhaps Italian submarine-boat building, which, as is general in other forms of ship-construction, likes to go its own way, is destined to be the pioneer in this respect. The Fiat Works at Spezia are now building for Italy boats with oval hulls, which, owing to a specially patented construction, are said to be capable of resisting water pressure at a depth of 130 feet. Of course, this does not in any way alter the fact that the circular form otherwise generally employed is best for resisting pressure in all circumstances; but it is nevertheless not impossible that the necessary rigidity may be obtained in an oval hull by suitable stiffening. A boat so formed is economical as regards space in the arrangement of the engines, etc., and makes possible considerably better lines. The measurements of this Fiat boat are: length, 139·4 feet; breadth, 17 feet; depth, 6·9 feet. Such a boat cannot be placed in either of the former principal classes.

In the following pages, where it is exclusively a question of considering the most modern constructions, mention will, for the reasons given, only be made of submarines of the type that momentarily governs the new building programmes of all nations, *i.e.*, of the large high-sea boat capable of making long voyages and possessing an extensive radius of action from its base. The coastal boat and the stowable boat are nearing their end; they are, as hitherto constructed, the products of a period now passed. Perhaps it is reserved to a later period and a further advanced technique to again call them into existence.

The newest Types of high-sea Submarines.

The present-day submarines of all countries exemplify with great unanimity the peculiarities which were laid down in the 1906 *Nauticus* as characteristic of the submersible, and which have been once more explained above. In addition to Italy, England, America, and, following England, Japan, are farthest from this type. The explanation lies in the course which development in submarine building has taken in these countries.

English Types.

England considered her submarines almost entirely as a complement to, or substitute for, the mine fields before her ports. The great disadvantage that contact mines have for England is that in the strong Channel currents they may easily be torn away from their moorings, and, being driven about by the tides, may be fatal to shipping during war and indeed long after. The Holland boat, which in a medium form was very suitable for the narrowest harbour defence, was chosen. An agreement with Vickers, lasting till 1907, held England fast to this type, from which the A B, and C classes were developed while retaining all its fundamental qualities.

These classes, however, show distinctly traces of the transition from the purely submarine-boat to the submersible, as shown above. This may be even more noticeable in the boats of the D class (particulars of which are not known), constructed after the lapse of the Vickers-Holland agreement.

American Types.

Submarines have not undergone any regular development in the United States of America. Here the two principal inventors, Holland and Lake, have constructed their boats, which were originally similar, on widely different lines. A fusion of the two types would have given a boat fairly similar to that which we recognise in the majority of other countries as the modern submarine. For this purpose, however, pressure would have been necessary on the part of the Government as the chief customer. This was wanting; instead, the Government undertook comparative trials in as impartial a manner as possible; these ended in the summer of 1907 in favour of Holland. It thus comes about that America, in its latest programme, provides for boats similar to the older English ones. In the meantime Lake has accepted the challenge to build a new rival boat. If he is successful with it, then America will forsake her present position and fall into line with the rest of the naval Powers; if, on the other hand, Lake fails, her falling into line will be somewhat deferred, but in spite of that will scarcely be prevented.

Italian Types—High-sea and Coastal Types.

With regard to the Italian types, everything necessary has been said above.

The principal characteristics which to-day are emphasised by all States in submarines are:—

Seaworthiness.
Large radius of action.
High surface and under-water speed.

All these demands tend to increase the displacement, as may be seen on almost every side. With advancing development in this direction a time will certainly arrive when it will be necessary to create a new type of smaller coastal submarines. The high-sea boats will become too unwieldy for use in coastal waters; the question of cost will also exercise a similar influence. At present, however, as mentioned above, all countries are fully occupied in creating a useful high-sea boat, which is recognised as the chief need. France and England, the countries having the principal submarine flotillas, obtain from former stages of their development small boats suitable for coast defence. In France the need of this division is recognised and is being thoroughly discussed in the Chamber. However, the need for such a special class does not appear to be generally recognised at present.

III. DISPLACEMENT AND SPEED.

Displacement.

In their latest designs most of the larger Navies—those of England, France and Russia—are having an under-water displacement of between 500 and 600 tons. France exceeds this size in some of her experimental boats of the 1906 programme. America may attain this figure with her enlarged *Octopus* type boat on order, and also with the projected *Lake* boat. Italy contents herself with a considerably smaller boat, viz., one of 200 tons, in the hope of obtaining with it, by technical improvements, results equal to those obtained by other nations.

Attention must here again be called to the already-mentioned favourable shape of the Italian boat, to the fact that benzine motors are still to be used, and to the submerged speed required, which is only 8 knots. These points allow a considerable saving in weight and space. The same arrangement suitable for a benzine engine of 500-H.P. would, if heavy oil were used, only allow the installation of an engine of approximately 300-H.P. The low submerged speed allows a saving in the accumulator plant, which is by far the greatest weight carried in submarines.

A prudent and systematic advance is advocated in the direction of increased displacement and submerged speed, in order to avoid unpleasant surprises in the management of the boat, and especially in that of the diving mechanism and the submerged steering gear. This increase finds its limit in the length of the boat, which increases with the displacement, and which is accompanied by the danger of grounding in shallow water. The perfecting of the submerged steering gear will always extend this limit. A further limit is imposed, however, by the necessity of adapting the displacement to the condition of the motor industry, which is not yet in the position to construct reliable engines of any given size in the compact form here necessary. France gets over the difficulty by the extensive use of steam engines, but in doing so has to accept other important disadvantages. No other naval Power has, up to the present, followed her example. Finally only a limited number of bow and stern tubes can be advantageously fitted in a submarine, of which those in the stern cannot be considered of the same value as those in the bow. it is also to be expected that later on the question of expense will put a limit to the increase of displacement for a class of ship whose receptive capacity for armament cannot be increased in a measure corresponding to her size and cost. Moreover, in view of the low speed of submarines and the limited possibility of planned co-operation, every undertaking demands a large number of boats in order to compensate for the insufficiencies of each unit. By the construction of new firing arrangements and by an improved technical development of the boat itself, these objections to an increase of displacement could of course be overcome.

Speed.

Speed stands in a close relationship to displacement; the limits are set by the same factors—length, motors and the capacity of the accumulators. While the old English Holland boats had a proportion of length to breadth of 5 to 1, almost all modern types go to 10 to 1 and more.

The endeavour to-day is principally to increase the surface speed, and the utmost limit attainable at present is generally accepted as 15 knots. This might be taken as a proof that the Powers are basing their designs on strategical requirements, making coast defence in its narrowest sense a secondary consideration. In a certain measure this is indeed the case, as may be seen from the increase in displacement and in radius of action. Partly, however, the great attention paid to submerged speed is a consequence of the lines on which technical development has taken place, this being more favourable to surface than to submerged speed. Motors are to-day making rapid progress towards ultimate perfection, while the development of greater capacity in the accumulators has proceeded at a considerably slower pace. Advances have, however, been made in this domain which have made a submerged speed of about 10 knots attainable. The importance of submerged speed tactically is everywhere clearly recognised. It will be especially in evidence when a really practicable means of defence against submarines has been discovered. A substantial increase in the submerged speed will only be attained when a standard motor is invented, *i.e.*, a thermal engine that can also be used under water.

IV. THE MOTOR QUESTION.

Although it could be easily shown that from a shipbuilding point of view there is recognisable to-day a considerable measure of agreement in all new designs, such is by no means the case with regard to the means of propulsion. This results from the fact that the great difficulties of submarine-boat construction lie in this direction, difficulties that individual constructors now seek to overcome on quite dissimilar lines. Here too, however, development has proceeded far enough to allow the lines to be seen with some certainty upon which in measurable time the majority of types will be developed. The motors for surface and submerged propulsion must be still kept distinct and dealt with separately. The attempts to create a standard motor for both methods of propulsion, which will be further treated of below, must be considered as abortive for the present. In consideration of the great advantages to be hereby attained, similar attempts will undoubtedly be again undertaken and continued. As science has hitherto been ultimately equal to every task set before it, we may at a later date find in the standard motor the typical engine for all submarines; it would, however, be premature to-day to attempt to forecast its probable form.

Surface Motors.

The requirements of an engine suitable for surface propulsion are naturally the same everywhere:—

1. Small weight and small space requirements.
2. High total capacity.
3. High number of revolutions. This is necessary in order that when employing it together with dynamos, which are always necessary to charge the accumulators, it may not be necessary to give these dynamos too large dimensions.

   On the other hand, the number of revolutions must not be so large that when the motor is coupled directly to the propeller the efficiency of the latter is largely decreased.

4. Reversibility and ease of control.
5. Low consumption of fuel.
6. Safety in working.
7. Noiseless movement.

The majority of the above demands can best be met by the use of combustion motors.[1] In making a comparison with the steam engine full value must be assigned to the fact that these motors are in a state of rapid and continuous development, and that extensive improvements in every respect may be expected in the future. The fuel chosen for combustion motors is the cause of their principal variations in design. Motors burning light fuels—benzine, benzol, gasoline, alcohol—compare favourably in every respect, *with the exception of safety when running,* with those burning heavier fuels, such as petroleum and paraffin oil. For stationary engines and for surface vessels, therefore, only the former are generally considered. In submarine-boat propulsion, on the other hand, the numerous accidents that have happened have increasingly led to the disuse of these engines. Heavy oil motors, and to some extent steam engines, have taken their place.

Apart from steam engines, Diesel motors (using fuel of every kind), Körting motors (using petroleum), as well as various kinds of gasoline motors, momentarily dominate submarine boat building. *Nauticus* for 1904 and 1906 contains a description of these types. How far changes have taken place since is seen from the observations below.

Thornycroft has recently constructed a petroleum motor for the Italian Navy (see page 1282). The English heavy oil motor by Gardener has proved useless for submarine boats.

1. *Weight and Space Requirements.*

The great advantage of combustion motors in comparison with every other sort of engine is shown by the weight requirement figures, as well as by the great improvement in the former which has taken place in the course of a few years :—

Type.	Weight per H.P. for a capacity of about 200 H.P.
Diesel, old	52 kg. (114·6 lbs.)
,, modern	32-35 kg. (70·5 to 77·1 lbs.)
Körting, old	26 kg. (57·3 lbs.)
,, modern	23 kg. (50·7 lbs.)
Gasoline engines of various types	About 15 kg. (33 lbs.)
Steam Engines	,, 50 kg. (110·2 lbs.)

---

[1] For the sake of simplicity in the subsequent text combustion and explosion motors are included under the former designation.

It may be mentioned here that the French motor-boat industry has already succeeded in reducing the weight of the engine to 2·2 lbs. to 3·3 lbs. per H.P.

Space requirements also favour the combustion motor as against the steam engine, since with the former the boiler room is entirely dispensed with. The size of the motor, however, increases greatly with an increase of power, since the latter must be attained not by enlarging the cylinders but by increasing their number.

2. *High Total Capacity.*

An increase of the engine capacity is prevented by the fact that the power that can be obtained from one cylinder is limited. In submarines about 50-H.P. is the highest power that one cylinder can develop. A further enlargement of the cylinder causes a degree of heat that is unbearable with the water-cooler available. One remedy, which, however, entails even greater disadvantages, would be the reduction of the working pressure or the number of the explosions, *i.e.*, of the revolutions. The greatest known performance is that of a French de Forest engine of 850-H.P. with 18 cylinders. These are placed in three groups at intervals of 120° around the propeller shaft, and require, therefore, such space as can only be obtained in submarines with difficulty, and in all circumstances allow the use of but one propeller.

It appears, however, that in a measurable time science will overcome this disadvantage within the limits applicable to submarines. A useful alternative is now afforded by the division of the engine capacity on to two, lately even three, propeller shafts.

3. *High Number of Revolutions.*

The most favourable and most suitable average number of revolutions, both for propellers and dynamos, is 600—650. A method of influencing the revolutions for one of the two ways of working consists in the insertion of cogwheel transmission gear, but this cannot be done in large engines. Other arrangements are now generally employed for speed regulation, as described in the next paragraph.

4. *Reversibility and Speed Control.*

Two methods of reversing often employed formerly are to-day scarcely worth consideration, in consequence of the increase of the power of the engine; these are adjustable propeller blades and reversing by the introduction of change gear into the propeller shaft, which permit the propeller to revolve in the opposite direction to the motor. The first-named process also allows a variation of the power of the engine, but is uneconomical in so far as the efficiency of a propeller of that sort is not high. The use of change gear has the disadvantage that it can only be used for reversing and not for regulating the speed of the engine. A combustion engine can further be reversed by compressed air. This method is, however, less reliable than the above, and is, moreover, considerably more complicated. Since every stroke of the engine implies the presence of compressed air, a compressor, driven by a special engine, must be used. In addition, air reservoirs and leads are necessary. A compressed air installation always limits the number of engine movements, the limit to which is set by the consumption of the quantity of air available. It is to be remarked that to reverse engines in a boat under way, air under very considerable pressure is required to overcome the current caused by her motion.

Modern installations make use of a combination of the existing motor and electric power for reversing and for controlling the speed. Motors with a very high number of revolutions maintain electrical transmission between motor and propeller. The motor drives a fast running current generator, and this actuates the slow running electric motor placed on the propeller shaft. Such an arrangement allows of any desired control of the direction of motion and the power of the engine. A loss of energy of about 15 per cent. of the capacity of the motor naturally results from the transmission. In spite of this, however, such a system may be more economical than direct drive at a high number of revolutions. At low speeds the accumulators take up that part of the engine's capacity not used in propelling the boat; moreover, such an installation permits the electric motors and accumulators to be combined in driving the propeller, and thus concentrates the whole of the power. When a power of 850-H.P. with 12 cylinders and one propeller is mentioned for the English B Class boats, when running on the surface, these figures probably represent a similarly arranged concentration of the whole energy available in the boat. Of course, as a rule, such a procedure is prohibited, as the electric power necessary for running submerged is thereby lost. This indirect arrangement allows of a rational use of the engines, inasmuch as, according to demand, the whole of the dynamos, a few of them, or even only one, can be utilised to drive the propeller motors. The dynamos not in use are either stopped or utilised for charging the accumulators. Such an installation gives great security from breakdowns.

With slower running motors the arrangement of the engine according to the del Proposto system is more advantageous. Upon the propeller shaft there is a dynamo in front, behind that a motor, and finally an electric motor. Between the two latter an electric coupling is inserted. When steaming at full speed on the surface this coupling is fast, the motor drives the propeller direct, the dynamo and electric motor running free without current. In manœuvring the coupling is detached, and the dynamo and electric motor set in motion; the working is then the same as described above for the indirect system; the motor actuates the dynamo, and this the electric motor with the propeller; the direct connection between motor and propeller is interrupted.

The Diesel motor cannot be reversed, but its speed can be regulated to a certain extent by altering the quantity of fuel forced into the cylinder with every stroke of the piston.

Every combustion engine requires for starting either the electric energy present in the accumulators or compressed air. Heavy oil engines must generally first be started with a lighter fuel, before the heavier oil vaporises and can be used. The only exceptions are the Diesel and Körting motors. With the former there is generally no vaporisation, with the latter the electric current furnishes the heat necessary for vaporisation.

5. *Small Consumption of Fuel.*

Except in steam engines, the weight of the fuel used is greatest with heavy oil motors. They use about 400 grammes (14·1 ozs.) of oil per H.P. per hour. The gasoline motor uses between 200 (7·05 ozs.) and 300 grammes (10·58 ozs.) for the same performance. The Diesel motor, with about 200 grammes (7·05 ozs.) of petroleum, uses the least fuel, thus compensating for its great weight. The steam engine, in addition to being of great weight, consumes the most fuel; it needs from 500 to 550 grammes (17·6 to 19·3 ozs.) of fuel oil (Mazout) per H.P. per hour.

6. *Safety when Running.*

As regards combustion motors the safety depends materially on the sort of fuel used. Only the fuel which does not give off gas in the temperature which occurs in submarine-boats can be considered safe. Small leakages must always be reckoned upon when oil is employed. Every oil that gives off gas at the inside temperature of the boat forms, together with the air, the same explosive mixture which is used inside the engine, and makes an explosion possible any moment. The naval Powers interested are consequently more and more inclined to give up gasoline and benzine motors in favour of the heavier petroleum motors; they are willing to put up with the greater weight of the engine and the need of more space. In cases where, in spite of all, the former engine types have been adhered to, the reason has been partly that the greater power has been placed in the foreground as the determining factor, and partly that the home industry of the countries concerned has not yet succeeded in creating a serviceable heavy oil motor. In England an attempt was made to meet the dangers connected with the employment of gasoline engines by the use of white mice, which are very sensitive to gasoline fumes, and from whose conduct it is, therefore, easy to know when leakages occur. In view of the great number of serious explosions which can be traced to the use of extremely volatile oil, the greater confidence of the crew of boats with heavy-oil engines will in any case prove a military advantage that may practically counterbalance the military disadvantage of these engines.

7. *Noiseless Action.*

The demand for noiseless running is still hardly met at all when employing combustion motors. The limited space prevents the use of efficient silencing arrangements. The sound of the exhaust gases issuing from the cylinders is, however, by no means so noticeable outside as would be expected from the noise in the engine room.

8. *More Recent Types of Surface Motors.*

Beside the motors which have been discussed in former *Nauticus,* there are in course of development more recent types, which show a relationship with the Diesel motor, but which at present have not matured to practical utility. A quick-running Diesel motor has recently been completed in the United Engine Factories, in Augsburg, which, with four four-cycle cylinders, develops 300-H.P. at 400 revolutions. Its weight of over 10 tons still gives an engine weight of 37 kilogrammes (81·6 lbs.) per H.P. It was proved at the trial that the capacity of this motor can be increased to 400-H.P. at 500 revolutions. With these figures the weight per H.P. is decreased to 25 kilogrammes (55·1 lbs.). As this figure is not obtained with the normal power of the engine, it has not been inserted in the table of weights on p. 1278. The H.P. can be varied from 100 to 400 at 250 to 500 revolutions, and with a consumption of oil between 180 and 220 grammes (6·1 and 7·8 ozs.). The above motor has been primarily constructed for use in an open vessel. If, however, in spite of the size of the cylinder (1 cylinder = 75- to 100-H.P.) it is possible to master the difficulties of cooling in a satisfactory manner, this type will be very useful for submarines.

The first English heavy oil motor has lately been designed; it is being constructed by Thornycroft and is intended for the Italian submarines *Otaria* and *Tricheco*. It is started by compressed air, gasoline being then used, and finally petroleum; it is said to be reversible; four are being made, each of 350-H.P.

Steam Engines.

Steam engines are only used at the present moment in France, where many trials have already been carried out with them.

After the failure of the benzol motor in the *Naïade* class, France adopted the Diesel type as a result of the Paris Exhibition of 1900, where the Diesel motor was exhibited. Engines of this kind, however, built in France, were not at first satisfactory. The result was the introduction of the steam engine, to a great extent.

Disadvantages of steam engines, as compared with combustion engines, are greater demands on weight and space; on account of the greater space occupied, there is an extended heating of the interior of the boat. Further, the consumption of fuel is greater, and continues when the engine is stopped. Fresh water must be carried to feed the boiler; the engine must be heated in order to run. The advantages are unlimited, viz., possibilities of regulating and reversing (employing reciprocating engines), reliability, possibility of constructing them in any size required; moreover, the staff is generally better acquainted with the steam engine, and the cost is smaller.

France originally provided two triple expansion engines of 350-H.P. each for the first series of the *Pluviôse* class (Q. 51—69). The results obtained to date are most satisfactory. In spite of that, at the last moment, at the beginning of 1908, combustion motors have been ordered to be used for Q. 67—69. Some of the four trial boats of 1906 are, it is said, to be provided with steam engines. In the meantime the Diesel motors of the *Emeraude* and *Opale* have given most satisfactory results on their trial trips. The other boats of the same year (Q. 70—89) are, therefore, to receive engines of this type. According to this it appears that the latter type and steam engines are generally considered as of equal value. For the 1907 boats (Q. 90—99) steam engines have been mentioned.

Under-water Motors.

Electric motors, supplied with current from accumulators, are still generally employed as under-water motors. The increase to about 10 knots of the submerged speed hitherto attained was made possible by the increase of displacement and the enlargement of the accumulator plant, and in a smaller degree by technical improvements in the accumulators.

Standard Motors.

A material increase in the submerged speed is probably only to be expected when the attempts to construct a standard motor for submerged and surface work have been successful. Practical trials in this direction have hitherto only been made in France. *Y* and *Omega* were to have travelled submerged and on the surface with petrol motors, but these attempts have been so far unsuccessful. The same was intended for the *Guêpe* class, the construction of which, however, has been given up altogether. At present it is stated that one of the four trial boats (Q. 89) is to have a steam engine as a standard motor.

V. Diving Apparatus.

The basis of all diving apparatus now in use is the presence of a certain amount of reserve buoyancy which must be overcome by the diving rudders. Every boat must, therefore, be under way in order to dive and remain under water; if she stops, then she comes to the surface automatically. In order to dive on the spot, trials have been made with vertical propellers, which, however, have not found a very general acceptance. The new Italian boats, which have been mentioned several times, are alone fitted with these propellers. Lake was aiming at the same object when he anchored his boat in certain depths by bow and stern anchors. In strong currents, however, it is doubtful whether this method is free from objection.

The present customary diving arrangements under way fall under two principal heads. One giving the boat an inclination during the dive, and one carrying out every alteration of depth on an even keel.

Diving with an inclination of the Boat.

One type of apparatus, consisting of a pair of horizontal stern rudders, is principally found in all English boats. It demands a very small amount of reserve buoyancy (A Class: 1/800 of the tonnage), and gives the boat gradually a sharp inclination of 10—12°; and in some circumstances, if by faulty trimming or through the roughness of the water the stern protrudes, it fails.

An improvement on this method is the fitting of two pairs of diving rudders, on bow and stern, and the enlargement of the blades of the rudders. In this case the rudders work twice: they first give the boat a dip, then they press it directly under the surface on account of the pressure of the water on the large blades produced by the motion of the boat. Correct handling is a matter for the commanding officer, who sets one pair of rudders as circumstances demand, while the helmsman works the other pair, continually altering their position. In this case the inclinations are considerably smaller, and a failure is impossible, since the forward rudders are sure to be in the water.

Diving on an even Keel.

The method described in the last paragraph forms a transition to the arrangement for diving on an even keel, which is a speciality of the Lake boats. The system applied to these boats consists of several pairs of hydroplanes arranged on the broadside, *i.e.*, of large surfaces, which, arranged obliquely, press the boat under water, without causing the boat to dip if it is properly handled. The advantage of this method is the fact that the boat is continually on an even keel, when its handling is undoubtedly more convenient and simpler. In this case the crew does not notice the somewhat extensive rocking and the correction of the same, while in a boat that has to be inclined sharply to reach the correct depth, this rocking may cause nervousness and, in some circumstances, panic. The boat fitted with hydroplanes can always keep its adversary in view by means of its periscope, while in a boat of the first type the periscope is inclined each time with the hull of the boat. On the other hand, with a boat which dives on an even keel, there is the disadvantage of loss of power. The large and broad hydroplanes exhaust by friction a not inconsiderable portion of the motive power even when horizontal; when the rudders are set, the sloping planes, which press the boat under water, almost entirely prevent any forward movement.

All these disadvantages are found in the second method mentioned, which is a transitional form of construction, but here they are reduced to a bearable extent. This method is consequently most in vogue in modern submarines.

The time taken to dive from the surface when under way to a depth of about 16 feet amounts at present to 4½—5 minutes. Boats driven by steam engines take a little longer.

VI. VISUAL APPARATUS.

Periscopes are still the only means of seeing from a submarine. A modern visual apparatus has generally the following characteristics.

It consists of at least two tubes, so that while the first is directed upon the enemy or the target, the other part of the horizon may be swept with the second at the same time.

The periscopes revolve on their axes and are movable perpendicularly (like a telescope). Special arrangements are generally fitted for both these movements. The perpendicular movement allows the tube to be lengthened and shortened at will without the boat altering its depth.

Periscopes must allow of as much extension as possible. A view should be obtainable when the boat has dived deep enough to produce no visible wash, and to be beyond the influence of any ordinary motion of the sea. The length is, however, limited by the technical impossibility of constructing periscopes beyond a certain length strong enough to resist the pressure under way without vibrating, which is very prejudicial to observation. The periscope has hitherto not reached a length of more than 23 feet. The views reflected should be well lighted and of natural size to facilitate the judging of distances.

The circle of vision is extended as much as possible, both horizontally and vertically. The former has nowhere reached more than 50°, *i.e.*, about the visual arc of the normal human eye. The latter should be sufficient for the ordinary inclinations of a submarine.

In the course of time a considerable number of different types have been evolved and partly introduced; their details are of no particular interest. All attempt to meet the above-mentioned demands; the principal differences are in the visual arc and in the degree of light. In general, a greater visual arc demands an increase of lenses and prisms, and thereby weakens the light, and *vice versâ*.

There are various forms of eye-pieces; they sometimes have a double and sometimes only a single sight aperture. Some types have fixed eye-pieces, and only the tube with the objective glass turns; the observer has, therefore, the advantage of not having to change his position.

Finally, there is one periscope which gives the possibility of observing both in natural size and with magnification, as in a telescope.

VII. ARMAMENT.

Torpedo Armament.

The armament of submarines consists in all nations of bow and stern tubes firmly built in. France alone employs—partly as well as, partly instead of, these—large numbers of releasing tubes of light frame-like construction fitted outside the boat on both sides. The *Circe* class of 351 tons and the *Pluviôse* class (Q. 51—99, with a few exceptions) of 398 tons surface displacement have 7 torpedo tubes; for the 4 larger experimental boats of the latter class, 7 tubes are projected. This arrangement, unfavourable in itself, is supported by the contention that a vessel of the value of a submarine should not have spent its energy with the firing of one or two bow shots; during the course of a submarine attack there is no time to load afresh and to use the same tube several times. England contents herself, as regards C class, with 2 bow tubes; D class is said to have a stern tube besides these. Russian boats have from one to four built-in tubes; Italy fits two bow tubes; America, in most recent times, one (in the *Octopus* there are two bow tubes; the Lake trial boats are to have six tubes).

Every increase of these built-in tubes, especially when it is necessary to reload them from inside in a submerged condition, considerably increases the difficulty of construction, and compels either an increase in the displacement or a limitation of other qualities.

Gun Armament.

Russia has provided for her *Krokodil* class a gun armament consisting of two 4·7-cm. (3-pounder) Q.F. and two machine guns.

VIII. SUBMARINE TACTICS; SUBMARINE DEFENCE.

Tactics of Submarines.

Up to the present there can be no question of special submarine tactics in the same sense as for other classes of ships, *i.e.*, of a combined employment of a number of boats according to determined fundamental principles. An attack by one or several boats on a moving ship only appears possible in specially favourable and exceptional cases. For this purpose sufficient submerged speed as well as a reliable means of signalling is wanting for the boats under water. Submerged speed is here of almost exclusive significance, for a boat that sights a ship must generally itself disappear very quickly in order not to be seen. The submerged speed is, however, still so small compared to the speed of other classes of ships, that it only allows the use of a position of attack accidentally gained, and not the working out of such a position according to plan. The American system of submarine sound signalling, successfully employed in navigation, comes first for communicating under water; other kinds of signals are still in the experimental stage. Advances in both domains will later on certainly permit the employment of submarines on tactical lines; the deficiencies of the individual boat must still chiefly be compensated for by larger numbers. Certain limited data as to the procedure of foreign Powers in the employment of submarine boat flotillas and individual boats have been published by the press. A certain section of the coast to be watched is apportioned to each boat; French experiences—the collision between neighbouring boats, the *Souffleur* and *Bonite*—led to the adoption of neutral stretches between spheres of operation of individual submarines. Such an employment of the boats necessitates their being limited to close coastal defence. England has probably made more extended experiments on the high seas, during constant cruises of several weeks' duration by individual flotillas.

A tactical exercise, which often falls to the lot of submarines in manœuvres, is the transmission of intelligence in an area infested by the enemy or to a blockaded fort.

No standard size for a tactical unit can yet be fixed. According to the distribution in March, 1908, England forms a sea-going division of nine A Class boats, six B Class, or five C Class, with a cruiser as parent ship. France maintains flotillas differing entirely in size and type in her various ports. America has in commission a tender with every three submarines.

Defence against Submarines.

Up to the present there is no practical means of defence against submarines; the only effective protection consists of the imperfect tactical qualities of the submarines themselves. All means employed hitherto, such as spar and towing torpedoes, nets, nets with explosives, special torpedo armament against submarines, employment of smoke bombs to interrupt the field of view, as well as the employment of ships' guns against submarines, appear at the present stage of affairs to be universally recognised as unserviceable. A thorough exami nation of the course would also appear to give no reliable protection. Dirigible air-ships could, in favourable weather, theoretically give a timely warning of the approach of submarines. Practically, however, their employment is not feasible, by reason of their imperfection in strong winds and when required for long periods. They can also easily become the betrayers of a fleet at great distances, and therefore, in certain circumstances, do more harm than good.

A fleet, which intends to protect itself from attacks, will avoid areas favourable to the work of submarines. Should this not be possible, a very sharp look-out and the utilisation of its superior speed and manœuvring capacity are at present its best available protection.

IX. ACCIDENTS. SAFETY ARRANGEMENTS.

Serious Accidents during the last two Years.

A.—*France.*

5th January, 1906.—Collision between the *Bonite,* submerged, and the *Suffren. Bonite,* fore part crushed, *Suffren* leaking.

28th July, 1906.—On *Cigogne* the sub-structure of the Diesel motors broke to pieces.

18th August, 1906.—Propeller shaft of the same boat broke.

13th August, 1906.—*Esturgeon* sank in dock at Saigon as water was admitted while all hatches were open.

16th October, 1906.—*Lutin* sank off Bizerta in consequence of the bursting of a ballast tank.

11th January, 1907.—*Algérien* sank in Cherbourg harbour in consequence of a cleaning tap of the forward ballast tank being left open.

20th January, 1907—Accumulator explosion on the *Opale.*

12th April, 1907.—The same boat started a leak forward in consequence of great vibration when travelling at full speed.

19th June, 1907.—*Gymnote* sank in dock at Toulon as water was admitted while the ballast tanks were full.

5th July, 1907.—*Bonite* fills in dock during a water-tight test. Probably a valve was left open.

22nd November, 1907.—Collision under water between the *Bonite* and *Souffleur. Bonite* badly damaged, *Souffleur* slightly.

B.—*England.*

8th May, 1906.—"A 12": emission of gasoline vapours discovered in time by the aid of white mice.

13th February, 1907.—"A.9." Collision with steamer *Coath.* Conning tower and fore part of boat crushed. Periscope bent.

13th June, 1907.—"C.8": gasoline explosion, commander killed, 2 men injured.

C.—*Russia.*

Explosion of gasoline vapour on the *Sterljad*; 1 man killed, 4 injured.

Besides these a large number of less important accidents, mostly collisions or groundings, have become known.

The most disastrous accidents in France, apart from the loss of the *Lutin*, were the four cases in which boats filled in dock or harbour. This was no fault of the material, but resulted from carelessness or malice on the part of the crew. Insufficient co-operation also between commanders and yard authorities has helped to make these cases possible. The *Esturgeon, Algérien* and *Bonite* have been badly damaged, and the *Gymnote* has been rendered unserviceable. Where gasoline engines are employed, the accidents caused thereby have been considerably reduced in number; security against such is, however, not yet attained. In the case of "A.12," the white mice enabled a serious disaster to be avoided. The explosion on "C.8," however, showed that this security is by no means absolute. As long as these dangers with gasoline motors cannot be entirely avoided or, at any rate, as long as no reliable warning apparatus for the detection of gasoline vapours has been invented, the employment of these engines must have an unfavourable influence on the confidence of the crew. It is questionable whether the advantages to be obtained in a military sense are not more than counter-balanced thereby.

Safety and Salvage Apparatus.

Apart from the safety apparatus incorporated in the construction of every submarine—emptying all tanks by compressed air or pumps, safety (drop) keels—the most elementary apparatus in general use is the telephone-buoy releasable from the inside of the boat, which floats up and permits of telephonic communication. The same idea has been applied to providing the boat with fresh air.

Safety apparatus must, however, principally consist in providing suitable material to raise sunken boats. This material must be on the spot during exercises, as experience hitherto has shown that loss of time is fatal to the safety of the crew. Apart from the introduction of suitable apparatus in the boat itself, the countries chiefly interested have therefore proceeded to construct salvage craft for this special purpose. England has fitted out two lighters and has stationed a floating dock of 800 tons capacity for submarines at Portsmouth. Germany has built a special salvage ship, the *Vulkan*, which will be referred to later on; and Italy appears to be projecting a similar vessel.

Various experiments have recently been made with an oxylit helmet. The air in this helmet can be permanently breathed as the oxylit binds the carbonic acid, while the air at the same time is provided with oxygen. By means of this helmet the crew of the boat is stated to be able to leave the boat through the conning tower or through a torpedo tube.

X. The Position as regards Submarines in the Various Countries.

France.

The Minister of Marine, M. Thomson, has continued the steadfast policy of submarine construction inaugurated on his entry into office. Since 1905 the large 400-ton boats of the *Pluviôse* class have been constructed in very considerable numbers yearly. The Minister of Marine designates them as defensive boats, which can operate in a large area and independently of the coast. Alterations in the construction of these boats are only introduced as far as they are justified by the experience gained in actual trial cruises. Moreover, four experimental boats for purposes of offence were commenced in 1906; three of these are of larger displacement—530 to 580 tons; they are designed for a surface speed of 15 knots, a submerged speed of 10 knots, and a radius of action of 2,000—3,000 nautical miles. The Minister declared that the laying down of further boats of this type was not expedient before positive results with trial boats had been obtained. This systematic procedure has already resulted in a decrease of the time taken for building. The *Pluviôse* was completed in three years, while formerly the times taken were considerably longer.

France still builds all her submarines in the Government dockyards at Cherbourg, Toulon, and Rochefort. Demands have been heard that private enterprise should have its share in this work. The capabilities of naval constructors attached to private firms would thus be utilised, and the building period would presumably be still further reduced. The point as to the possibility of keeping secret new designs in the Government dockyards is considered of less importance.

All submarines ready for service are in commission. The chief stations are Cherbourg and Toulon. Sixteen boats are stationed at the former port, eleven at the latter. Some of these boats have yet to carry out trials. In the course of 1908 these numbers will be increased by two boats at Cherbourg and four at Toulon, for trials only. Smaller stations are: in the Channel, Calais, four boats, formerly at Dunkirk; in the Atlantic, Rochefort, four boats. Outside France there are three boats at Bizerta and four at Saigon. On account of the great heat and the humid atmosphere, the latter have suffered much, both as regards *matériel* and *personnel,* and have only reached a low grade of efficiency. This is again limited by the muddiness of, and the difficulty of navigating, the rivers.

New and more stringent regulations have been issued for the selection and training of submarine crews, on account of the accidents which have occurred.

The flotilla commanders are selected from former commanders of boats. The duration of command is 18 months, preceded by 1 month's trial command. For commanders of boats the duration of command is the same, being preceded by 3 months' training, one of which takes place on the boat to be commanded, under the guidance of the previous commander. Latterly, the second-in-command also remains 18 months on board. Commander and second-in-command may never be relieved at the same time. The crew is specially selected from volunteers; at home they serve 24 months on board, abroad 18 months. Allowances, advantages as regards promotion and leave, and special uniform badges, induce plenty of suitable men to serve. This circumstance, in conjunction with the continuous and instructive exercises and manœuvres, gives the best possible augury for the French submarine *personnel*. Thus, for instance, in September, 1907, the *Opale* completed a cruise of 550 nautical miles with her own resources at a speed of 8 to 9 knots in waters difficult to navigate.

The damaged boats *Lutin* and *Gymnote* have been struck off the list, and are to be employed in exercises in raising submarines. Further, the construction of "Q.61," one of the 21-ton trial boats, and of the two 45-ton boats of the *Guêpe* class, designed during the Pelletan administration, has been stopped.

The laying down of the further eight boats of this class, not yet commenced, was immediately countermanded by the present Minister of Marine on taking office.

England.

On the expiration of the contract with Vickers, concluded on the purchase of the first Holland boats, England will continue to have most of her submarines built by this firm. In addition, Chatham will be made acquainted with submarine construction by the annual assignment of two boats. Classes A, B and C show certain gradual improvements in comparison with the Holland boats, in displacement, seaworthiness, and engine capacity. The advancement from one to another is cautious and by no means exaggerated, nor in any way spasmodic. A more decided advance appears to have been made in the D class, the first of which is still under trial. The new type is said to differ from the C class in having greater displacement, better lines, more powerful engines, and higher speed. Its armament consists of one stern tube, in addition to two bow tubes, like its predecessors. Other details of its construction have not been published. It must be supposed to be a boat of about 600 tons, with extensive superstructure and a surface speed of 16 knots.

The rate of building submarine-boats appears to have been latterly retarded. The Budget of 1908-1909 only provides 10.2 million marks (£500,000) for new construction.

England uses gasoline motors in all her boats—at any rate, up to the C class. The explosions and accidents, formerly numerous, have considerably decreased. This is not entirely due to the use of white mice to give warning of escaping gasoline vapour, but partly also to the greater perfection of the machinery and the fuller experience of the *personnel.*

Of the six submarine-boat stations provided for, only three are occupied up to the present, May, 1908:—

1. Portsmouth.

Belonging to the Home Fleet:—Parent-ship *Mercury,* the captain of which is also Inspecting Commander of Submarines. Torpedo-gunboat *Hazard,* submarines "A.6," "A.11," "A.12," "B.1," "B.4." Parent-ship *Bonaventure,* submarines "C.7—15." Allotted to the Commander-in-Chief, "H.1—5," "A.1—5."

2. The Nore (Sheerness).

Belonging to the Home Fleet:—Parent-ship *Thames,* submarines "C.1—6."

3. Devonport.

Belonging to the Home Fleet:—Parent-ship *Forth,* submarines "B.2," "B.3," "B.5—11." Allotted to the Commander-in-Chief, "A.7—10."

Torpedo-boats, tenders, store-ships, etc., are also allotted to the individual flotillas.

As regards the employment of the *personnel,* it is ordered that no man shall be told off for submarine service for a longer period than five years, including the training period. If, after this period, he has completed a two years' commission on board ship, he can be employed in submarines for a further period of three years.

The training of officers for submarine-boat service comprises a theoretical course ashore of six weeks, practical service on board a submarine as learner for six months, and, after passing an examination, a one-year's commission as second officer in a boat. If efficient, an officer may then take command. Lately, submarine-boat officers, together with gunnery officers, have been most favourably treated as regards promotion.

U.S.A.

Besides the twelve submarines ready, which are all of the Holland type, America has ordered, as a result of the comparative trials of 1907 between a Holland and a Lake boat, seven Holland boats of the *Octopus* type, three of increased dimensions, and two Lake boats. Lake has been entrusted with the construction of two new boats; the boat he used for the comparative trials did not fulfil the conditions of the trial programme, and, in spite of other undoubted advantages, was considered inferior to the Holland type. The Government will take over the two Lake boats if they fulfil certain conditions.

Lake has pledged himself to attain a surface speed of 16 knots instead of the 14 knots demanded. The boats are to be ready on the 1st May, 1910.

The boats ready are not all in commission. Flotillas Nos. 1 and 2 are each assigned three boats and one tender. The rest are either attached to reserve squadrons, or are lying at the yards.

Two boats, *Shark* and *Plunger,* will be shortly transported by steamer to San Francisco (where the *Pike* and *Grampus* already are), and will later on, probably, be moved to Manila in order to strengthen the local defence of the East Asiatic base.

The cruisers *Machias* and *Castine* are stated to have been lately fitted as parent-ships for submarines, with tanks for 10,000 gallons of gasoline, electric engines repairing workshop, air-pumping plant, and a torpedo tube for training with torpedoes.

Russia.

Russia has twenty-nine boats of various types ready, and seven laid down or projected. Of those ready, six are of the Holland type, eight Lake, three are from the Germania Yard, seven are from designs by the Russian Engineer, Bubnow, two are semi-submarines of the Dzwiecki type, three are of special types. Contrary to the American trial results, the Lake boats in Russia have proved superior to the Holland. A voyage undertaken in 1905 by two of the former type without escort in stormy weather, from Kronstadt to Libau—about 430 nautical miles—made these boats specially popular. The three Germania boats recently covered a similar course—Kiel to Libau (425 nautical miles)—at an average speed of 8.3 knots, without interruption. Of those building, two are Lake, one Bubnow, and three Beklemischew boats. The Beklemischew type—a Russian development of the Lake type—appears to have been generally approved for new construction. The *rôle* to be played in the future by submarines in the naval armament of Russia depends upon the final decision of the Government and Duma (not yet arrived at) as to the reconstruction of the fleet.

Russian submarines in commission are distributed as follows for 1908:—

1. Baltic Fleet:—Training-ship and parent-ship *Khabarovsk*; despatch-boats *Voevoda* and *Slavyanka*; five submarines.
2. Black Sea Fleet:—Transport *Penderakliya,* five submarines.
3. Pacific Fleet:—Repair-ship *Kseniya,* fourteen submarines.

Since the spring of 1906 the submarine-division and school for all submarines and attached vessels in the Baltic Sea, has had its station at Libau.

Italy.

Italy has a submarine type of her own designed by Laurenti. The special peculiarities of the latest Italian boats have already been mentioned several times. Besides the old trial boat *Delfino,* there are three boats ready, all with petrol motors for surface running. The two boats of the same class building are to be furnished with a new sort of petroleum motor by Thornycroft. The boats of the new type are to have benzine motors, as already mentioned. When the six boats of this type projected are ready the maximum number of boats approved, namely, twelve, will have been reached. Submarines have already been successfully employed in the manœuvres of 1906 and 1907.

The submarine depôt is to be moved from Venice to Tarento, as the depth is more favourable at the latter place.

Japan.

Japan has seven Holland boats ready; they were built during the war at the Fore River Works, and put together in Yokosuka. They took no part in the war operations. This remark applies also to two small boats of 62 and 86.5 tons, which are said to have proved unserviceable. There are now two boats building at Vickers, similar to the English C class. A transport-ship will, presumably, also be built, capable of containing the two boats, which can be afterwards used for the transport of submarines. The money for two more submarines has been voted.

Austria-Hungary.

Austria-Hungary has evinced more interest in submarine construction since 1906. In that year one million Kronen (£41,667), and in 1907 six million Kronen (£250,000), were voted for this purpose. There are six boats building: two from designs by Lake, at Pola; two of the Holland type by Whitehead, at Fiume; and orders for two have been placed at the Germania Yard at Kiel.

Other Navies.

Sweden has, since 1904, been making trials with the submarine *Hajen*; this boat has taken part in the manœuvres of recent years. The fleet Programme for 1913, at present before a Parliamentary Commission, provides for four submarines of the first class and five of the second class. There is a new submarine building at the Fiat Works in Spezia, which is said to have the same dimensions as the new Italian boats.

Norway's first submarine was ordered from the Germania Yard in 1907. The fleet Programme provides for four boats in all.

Holland is said to have been successful with her Holland type submarine "I" (formerly *Luctor et Emergo*), built at the "Schelde" Yard in Flushing, and experimented with since 1905. Nothing is decided as to further construction.

Denmark has voted a submarine for 1908, and placed the order with the Fiat Works; it is to cost 460,000 Kronen (£25,000)—to be paid for from the sum realised by the sale of old ships—and is intended only for close coastal defence.

Portugal is studying the plans of a submarine prepared by a naval officer. The boat is said to be of 140 tons displacement.

Brazil.—The Fleet Law of 1906 provides for the construction of three submarines. By whom they are to be constructed is not published.

Germany.

After the successful results of the preparatory trials in Germany the construction of submarine-boats has begun on a larger scale. The annual expenditure provided for this purpose has appeared in the Navy Bill.

No details have been published regarding German submarines. It is, however, known that "U 1," after having completed its trials in the North Sea, which had previously been held off Kiel, returned independently round Skagen to Kiel. This voyage of 580 nautical miles was completed without interruption in 62 hours.

In March, 1908, the docking-ship *Vulkan* was completed at the Howaldt Works—a self-propelled salvage vessel, which can accompany submarines and, when necessary, raise sunken boats and at once dock them. Her lifting capacity is 500 tons, sufficient, therefore, to bring to the surface any submarine-boat of a type that can be foreseen at present, even if the boat is full of water.

Apart from ships told off at certain times, the division-boat "D.10" is used in general exercises with submarines.

XI. Conclusion.

At the commencement it was observed that the submarine is to-day no longer under trial, but has become a fully-proved weapon of naval warfare. The question whether submarines are necessary at all is unanimously answered in the affirmative; the number and capacity of the submarines of a nation has to-day become a factor in the valuation of its sea power. The development of the submarine is, however, on the other hand, not yet far enough advanced to enable its employment, in a tactical sense, on the high seas to be thought of. Its present qualities limit it to close coastal defence, and, perhaps, to taking advantage of specially favourable situations at greater distances. Further advances in its utility are only a question of perfecting it technically; these advances are certainly to be expected, as it is at present in an early stage of development. The employment of the submarine for offensive action or in a battle on the high seas is certainly a vision of the future, the discussion of which in the present condition of submarine construction would be of little value.

LIST OF SUBMARINE BOATS EXISTING AND PROJECTED AT THE BEGINNING OF 1908.

Country and Number.	Class and Name.	Displacement.		Length.	Breadth.	Motor.		Speed. Knots.		Steaming radius. Nautical miles.		Torpedo tubes.	Completed.	
		∧ tons.	∨ cub.m.	m.	m.	∧	∨	∧	∨	∧	∨			
FRANCE. 1	*Gustave Zédé*	206	266	48·5	3·2	Electric		8	5	80	—	1	1893	
1	*Narval*	106	168	34	3·7	Steam	Electric	10	7	$\frac{620}{8}$	$\frac{70}{5}$	4	1899	
3	*Morse* class (*Français*, *Algérien*) ...	136	146	36	2·7	Electric		10	8	$\frac{100}{8}$	—	3	1899	
4	*Triton* class (*Sirene*, *Silure*, *Espadon*)...	155	202	31·5	3·7	Steam	Electric	8	7	$\frac{500}{7}$	$\frac{25}{7}$	4	1901	
3	*Farfadet* class (*Gnome*, *Korrigan*)	184	202	41·3	2·9	Electric		9	7	—	—	4	1901-2	
20	*Naïade* class (*Bonite*, *Lynx*, *Anguille*, *Phoque*, *Protée*, *Grondin*, *Perle*, *Thon*, *Souffleur*, *Ludion*, *Otarie*, *Loutre*, *Méduse*, *Sturgeon*, *Oursin*, *Alose*, *Dorade*, *Truite*, *Castor*)	68	—	23·5	2·2	Electric		8	5	—	40 to 50	2	1902-5	The benzol motor built in afterwards may not be used.
1	*Z*	202	220	41·3	3·0	Petrol	Electric	8·3	4·1	—	—	4	1905	
2	*Aigrette* class (*Cigogne*) ...	172	220	35·8	3·9	Diesel	,,	8·7	6·4	1,200	—	4 6*	1905 —	* *Cigogne*.
1	*X*	168	—	37·4	3·1	Benzol	Electric	10·5	7	—	—	4	1905	
1	*Y*	213	—	43·5	3·0	Petrol motor for ∧ & ∨ cruising		10	6	—	—	5		In the trial stage the engines may have been altered.
1	Ω	301	400	47·0	4·2			11	8	—	—	6		
6	*Emeraude* class (*Opale*, *Rubis*, *Topaze*, *Saphir*, *Turquoise*)	390	450	44·6	3·9	Diesel	Electric	11·3	(9)	$\frac{1,000}{8}$	—	6	4 1896-08	2 building.
2	*Circe* class (*Calypso*) ...	351	498	47.1	4·9	—		11·8	7	$\frac{2,000}{8}$	—	6	1907-8	

∧ = on surface ; ∨ = submerged.

FRANCE. 18 (contd.)	*Pluviôse* class (*Ventôse, Germinal, Floréal, Prairial, Messidor, Thermidor, Fructidor, Vendémiaire, Brumaire, Primaire, Novôse, Papin, Fresnel, Berthelot, Monge, Ampère, Gay-Lussac*)	398	550	51·1	4·9	Electric		12.0	7·8	$\frac{1{,}000}{8}$	--	7or5	1907-8	The three last boats have petrol motors. 13 commenced in 1906
16	*Q* 70–72, 75–81, 83–88 ...	—	As *Pluviôse*		—	Petrol motors		As *Pluviôse*						
1	*Q* 73	577	810	64·5	6·8	Diesel or Steam	Electric	15	10	2,000 to 3,000		7	B'ld'g	
1	*Q* 74	530	628	64·8	4·3		,,	15	10			6		
1	*Q* 82	555	735	56 2	8·0		,,	15	10			7		
1	*Q* 89	355	450	44·0	4.0	Steam		15·8	10			7		
10	*Q* 90-99				As *Pluviôse*									
5	*Q* 100-104	Sanctioned in 1908 Budget. (Probably as *Pluviôse*).							—	—	—	—	—	Building.
ENGLAND.														
5	*H* 1-*H* 5	104	124	19·2	3·6	Gasoline.	Electric	8	6·5	$\frac{350}{8}$		1	1902	
4	*A* 1-*A* 4	180	207	30·2	3·9	,,	,,	11·5	7·5	300	30	*A*1 1 others 2	1903	
8	*A* 5-*A* 12	180	207	,,	,,	,,	,,	11·5	8	500	,,	2	1904-5	
11	*B* 1-*B* 11	280	318	41·1	4·1	,,	,,	12·5	8·5	500	—	2	1905-6	
11	*C* 1-*C* 11	—	318	,,	,,	,,	,,	12·5	8·5	$\frac{1{,}350}{9}$	—	2	1906-8	2 Propellers.
1	*A* 13	—	207	30·2	3·0	,,	,,	11·5	8	—	—	2	1908	
19	*C* 12-*C* 30	—	318	41·1	4·1	,,	,,	14	8·5	$\frac{1{,}350}{9}$	—	2	1908-9	
1	*D* 1	—	600	—	—	—	,,	(16)	(10)	—	—	3	1908	
	D Class (Sanctioned for 1908, £500,000)	—	about ,,	—	—	—	,,	,,	,,	—	—	3	1909-10	

Country and Number.	Class and Name.	Displacement. ∧ t.	Displacement. ∨ cub.m.	Length. m.	Breadth. m.	Motor. ∧	Motor. ∨	Speed. Knots. ∧	Speed. Knots. ∨	Steaming radius. Nautical miles. ∧	Steaming radius. Nautical miles. ∨	Torpedo tubes.	Completed.	
RUSSIA.														
7	*Delfin* class (*Kassatka, Skat, Nalim, Makrel, G. Scheremetjew, Okun*)	115 to 150	150 to 200	24	4·3	Various combustn engines	Electric	6·5 to 8	about 6	—	—	4	1903-4	Bubnow System.
6	*Som* class (*Byeluga, Lossos, Peskar, Schtschuka, Sterlyad*)	120	—	19·3	3·6	Gasoline.	Electric	9·5	7·4	—	—	2	1904-5	Holland boats.
1	*Forel*	17	—	—	—	Electric		8	6	—	—	1	1904	Germania trial boat.
6	*Assyotv* class (*Bytschok, Kefal, Paltus, Plotwa, Ssig*)	135	175	20·5	4·2	Gasoline.	Electric	10	7	2,500	30	3	1905	Lake boats.
1	*Keta*	—	—	—	—	—		—	—	—	—	—	—	Trial boat.
3	*Karp* class (*Karas, Kambala*)	200	240	39·9	3·1	Petrol	,,	10·5	8	$\frac{1,800}{8\cdot5}$	$\frac{40}{7}$	1	1906	Germania boats.
	Besides 2 semi-submarine boats—*Dzwiecki* type.													
4	*Crocodile* class (*Kaiman, Drakon, Alligator*)... ...	—	400	38	4·3	Gasoline	,,	(15)	(6·5)	—	—	4	B'ld'g 1908	Lake boats.
1	*Akula*	360	—	—	—	—		—	—	—	—	—	B'ld-ing	Bubnow boats.
1	*Minoga*	117	—	—	—	—		—	—	—	—	—		
1	*Ssudak*	110	—	—	—	—		—	—	—	—	—	—	Bought from Newski Yard, 1908.
	Besides 3 boats projected—*Beklemischew* type—each of 450 tons.													
U.S.A.														
1	*Holland*	64	74	16·4	3·1	Gasoline	Electric	6	4	200	30	1	1900	*Holland* type.
7	*Plunger* class (*Pike, Adder, Grampus, Moccasin, Porpoise, Shark*)	105	120	19·3	3·6	,,	,,	8·5	7·2	300	—	1	1903-4	
3	*Cuttlefish* class (*Tarantula, Viper*)	—	173	24·7	3·9	,,	,,	10	8·5	—	—	2	1906	
1	*Octopus*	—	278	32·3	—	,,	,,	11·6	10	1,000	—	2	1906	
	Building: 4 *Octopus* type, 3 larger boats of same type, and													
2	Experimental Boats, *Lake* type	—	500 (about)	49	—	Gasoline	Electric	14	9·5	3,000	(70)	6	May, 1910	Will not be purchased until trials satisfactory.
8	Submarines sanctioned by Budget of 1908	—		—	—	—	—	—	—	—	—	—	—	

ITALY.														
1	*Delfino*...	95	107	24	2·9	Benzine	Electric	7	6	—	30	1	1896	Trial boat.
5	*Glauco* class (*Squalo, Narvalo, Otaria, Tricheco*) ...	150	175	36	4·3	Petrol	,,	13·5	7	2,000/8	—	2	1905-8	Last 2 still building.
7	New Series	180	230	42·5	5·1	Benzine	,,	15	8	875/8	40/5	2	—	Projected.
JAPAN.														
5	Nos. 1-5	106	125	19·8	3·7	Gasoline	Electric	9	7	300/9	28/7	1	1905	
2	,, 6-7	62 or 86·5	—	—	—	—	—	9	7	—	—	1	1905	
2	,, 8-9 as English C. class													
2	,, 10-11 sanctioned ...													
AUSTRIA-HUNGARY.														
2	*Lake* type	250	—	50	3	Diesel	Electric	12	7	—	25/7	—	1908	Building at Pola.
5	*Holland* type b'ld'g at Fiume	270	—	—	—	—	—	13	8	—	—	—	—	
2	*Germania* type building at Germania Works	390	—	—	—	Petrol	Electric	12	7	—	—	—	—	
SWEDEN.														
1	*Hajen*	107	127	19·8	3·6	Petrol	Electric	12	7	1,000	—	1	—	
1	*Fiat* type	180	230	42·5	4·3	Benzine	,,	15	8	1.000/8	40/5	2	Aut. 1908	Building at Spezia.
NORWAY.														
1	*Germania* type building at Germania Works, Kiel ...	—	—	—	—	—	—	—	—	—	—	—	—	
HOLLAND.														
1	No. 1	—	120	20·4	3·5	Gasoline	Electric	8·9	7·2	400/8	30/7	1	1905	

THE CAVALRY OF FREDERICK THE GREAT: ITS TRAINING, LEADING AND EMPLOYMENT IN WAR.

By Major W. H. GREENLY, D.S.O., p.s.c., 12th Lancers,
Brigade Major, 1st Cavalry Brigade.

Wednesday, 31st March, 1909.

General Sir J. D. P. French, G.C.V.O., K.C.B., K.C.M.G., Inspector-General of the Forces, in the Chair.

The Army Before the Accession of Frederick the Great.

IN order to form a clear idea of the work accomplished by Frederick the Great in raising the Prussian Cavalry to that pitch of perfection to which it attained under his instructions, it is necessary to consider the condition of the Army as he found it in 1740 on his accession to the throne of Prussia.

The creator of that Army, with which Frederick was afterwards able to more than hold his own against the whole of Europe, was his father, Frederick William the First, generally known as the Drill-Sergeant of Europe.

In all matters connected with the Army his right-hand man was Prince Leopold of Dessau, well known to readers of Carlyle as The Old Dessauer. He, like his chief, was a veteran of the wars of Marlborough and Prince Eugene, and in these had greatly distinguished himself.

That these men understood their business, in so far at least as the training of the infantry was concerned, was amply demonstrated soon afterwards by the Prussian victories in the first Silesian war.

Traces of two of their most important reforms are visible in the German Army of to-day.

In the first place, the corps of officers was put on a sound footing and established in that high position in the State which they still most worthily occupy. Secondly, the introduction of the Canton system in 1733 laid the first foundation of the principle of universal service on a territorial basis.

"All dwellers in the land"—so ran the edict—"are born to arms, and every man belongs to that regiment in whose district his home lies."

Exemptions, however, were numerous; the numbers required for the Army were small in proportion to the population; the period of service was unlimited, and of those actually serving one-third were allowed to be foreigners, and were recruited abroad.

Both enlisting and maintaining the soldiers was the private concern of the company and squadron commanders.

Except for reviews the squadron commander was only supposed to keep with the colours three-quarters of the establishment, and in actual practice he also allowed a third of the remainder to be on special furlough.

Only those present with the colours received any pay, and the balance thus saved was supposed to be used for recruiting purposes. Accordingly, when he could obtain recruits cheap, the squadron commander made a profitable business out of the squadron, and the command was naturally a much-desired post

Horse-breeding in Prussia at this time was at a low ebb, and the bulk of the horses for the Army were brought from abroad.

As regards the organisation and methods of fighting of the Army as a whole, time does not admit of more than a brief reference.

The proportion of cavalry to infantry was, roughly, one to three, and of artillery one light gun, usually a 3-pounder, to 1,000 of the other arms; in addition there were a few heavier guns and howitzers.

A battle generally began by the artillery advancing and engaging in a duel, while the infantry, with the cavalry guarding their flanks, halted out of range awaiting the result. When the infantry lines had arrived within 500 or 600 yards of each other, the opposing horsemen advanced to the cavalry fight. During this they often drifted away from the battle-field, and not infrequently remained absent for the rest of the day.

After a battle the victorious army usually re-formed on the ground it had won, and rarely pursued. The cavalry never followed up the beaten enemy, and touch was quickly lost.

To turn now in more detail to the cavalry. It was organised into Cuirassiers, Dragoons and Hussars. The Cuirassiers rode large, heavy horses, nearly all blacks, while the Hussars were mounted on animals which averaged rather under 15 hands. All were armed with a sword, two pistols, and a carbine, Dragoons having in addition a bayonet. They rode in panelled saddles of the German pattern, and bit and bridoon bridles, the bit being first introduced shortly before Frederick the Great's accession. The dress of the period is too well known to need description. The only armour still retained was the breastpiece of Cuirassiers.

Regiments of Cuirassiers and Dragoons had five or ten squadrons, Hussars three or six. The squadron was the real unit for all purposes; it consisted of six officers, twelve non-commissioned officers, and about one hundred and thirty troopers. It was divided into four troops, and formed up in three ranks, the largest men and horses in the front rank. Line was the formation for attack, which was carried out at the trot.

Speaking generally, the drill of the cavalry corresponded closely with that of the infantry; much of it was extremely complicated, and without the slightest value in the field. All cavalrymen, especially the Dragoons, were trained to fight on foot; but the methods employed were practically the same as those of the infantry. Mounted drill was only carried out once or twice a week, and drill on foot once a week.

The cavalry regulations, in spite of their defects, contained a good deal of sound instruction for the training and employment of cavalry. The practice, however, fell far short of the theory, and during 13 years of peace matters in this respect had been growing steadily worse. The endeavour to economise by saving horseflesh had had the inevitable result that the men had been more and more exercised on foot, less and less on horse-back. The constantly recurring fallacy that the rifle is the cavalryman's chief weapon was also widely accepted. The fact is, that, good soldiers as they were in many respects, neither Frederick William nor Prince Leopold, both infantrymen, had any conception of the true functions of cavalry or of the principles which should govern its training.

Significant of the whole state of affairs is the order prescribing the trot as the pace of the charge. Even under Frederick William's father, the attack had been practised at the gallop, while in England, nearly 100 years before, Cavaliers and Roundheads had ridden at each other at the full speed of their horses. But with all these faults the cavalry, though wretched horsemen, were, in common with the rest of the Army, imbued with the most perfect discipline—a fact which goes far to explain the wonderful rapidity with which they improved when once they came under the direction of a true cavalry soldier.

FROM THE ACCESSION OF FREDERICK THE GREAT TO THE END OF THE SECOND SILESIAN WAR.

Frederick the Great came to the throne in May, 1740.

The cavalry at that time consisted of:—

12 regiments of Cuirassiers, 60 squadrons.
6 regiments of Dragoons, 45 squadrons.
2 corps of Hussars, 9 squadrons.
i.e., in all 20 regiments in 114 squadrons.

The King thus described the Cuirassiers: "They consisted, like the infantry, of very big men, and rode enormous horses. They were giants on elephants and could neither manœuvre nor fight. There was never a parade at which some of them did not fall off. They were not masters of their horses, and were far more drilled on foot than on horseback. The officers had no idea of mounted duties at all, least of all of their duties in war, and had no knowledge of the use of ground. As regards what is required of cavalry in battle, they were absolutely without instruction."

Then again: "My father left me a bad cavalry: hardly an officer who knew his duty. The men were afraid of their horses, and hardly ever mounted them; they only knew how to drill on foot."

Six months after his accession war broke out, and the poor opinion he had formed of the cavalry received only too clear a confirmation.

The Austrian Hussars at once showed themselves superior to the slow and clumsy Prussian cavalry. In the first two months they had surprised a regiment of Dragoons, captured their standard, and nearly made a prisoner of the King himself. They had also slipped through the Prussian outposts into Silesia, and were already carrying on there a harassing guerilla warfare.

The first serious action of the war was the battle of Mollwitz, fought on the 10th of April, 1741. Here the Prussian cavalry certainly proved themselves brave enough, but in other respects they hopelessly failed. They were too slow to take advantage of an excellent opportunity of charging the Austrian cavalry in flank, and as they were beginning to be got on the move to do so they were themselves charged by other Austrian cavalry and completely routed. The King put himself at the head of some squadrons in reserve and endeavoured to save the situation, but the whole Prussian cavalry was quickly swept from the field.

The King himself found safety among the infantry, whose steadiness gave him the victory.

Nothing can show more clearly the results of the training of Frederick's predecessor. On the one hand, the infantry "a splendid instrument of war"; on the other hand, the cavalry "neglected and completely ignorant of its duty."

Frederick's comments were: "The cavalry are so bad that it isn't worth the devil's while to take them away. They can drill with the precision of Grenadiers, but are equally slow; in front of the enemy they are useless, and invariably arrive too late."

Improvement, however, was already beginning, and by the end of July we find the King in his camp at Strehlen showing off 62 squadrons to the French Ambassador. The latter, who had seen their wretched condition at the time of Mollwitz, now reports to the French King: "This cavalry is the most surprising thing in its kind that can be imagined"; and this only three months after the battle.

In the following March, 1742, the King issued some important instructions. "Instructions for the Cavalry in Battle" and "Instructions for the Colonels and other Officers of Hussar Regiments." These instructions breathe the true cavalry spirit in every line, and are full of sound cavalry teaching. Among the points emphasised are the importance of the squadron as the tactical unit, and the necessity of the squadron leader being ever ready to act on his own initiative. The Prussian cavalry was always to be the first to charge, and never wait to be attacked. The gallop was laid down as the pace of the charge. "When the cavalry advance they are to do so at the trot until within about 100 paces of the enemy, then, still well closed, the horses are to be driven in at the gallop, and the enemy ridden down."

Squadron commanders are made responsible that not a man uses carbine or pistol in the mounted attack; the enemy is to be ridden at sword in hand.

The instructions for the Hussars, too, are most comprehensive. The officers are told that their first care must be to have their troops as well drilled as the Dragoons, and that their usual form of attack is to be at close files with sword in hand. In attacking Hussars, not more than one troop in each squadron is to skirmish in loose order, firing from their horses; the remainder are to keep closed, and seek for opportunities to attack with the sword.

The principles laid down for outposts, patrolling, and attacks on convoys are much the same as those of to-day. Officers are cautioned that when sent out reconnoitring, "it is a poor kind of bravery on this service to get engaged with the enemy; they should rather act by cunning and stealth."

Meanwhile the war continued. The next considerable battle, that of Chotusitz, May, 1742, showed that the sound teaching and indefatigible energy of the King was already bearing fruit.

The cavalry, though finally defeated, achieved some success, and on the whole the day was by no means discreditable to them.

That they took their fair share in the fighting is proved by their losses—1,280 men and 2,500 horses out of a total of less than 10,000 cavalry.

The King attributed their defeat chiefly to two causes: too great intervals between the squadrons and the want of a third line. These defects he immediately set about remedying.

Less than a month after Chotusitz the Treaty of Breslau brought the King the peace he so much needed for continuing his reforms.

He now made time, among the countless other duties which claimed his attention, to devote much of his energy to personally instructing his cavalry. He showed in this work an expert knowledge of his subject and a true appreciation of those qualities, moral even more than physical, which alone can convert a collection of men and horses into cavalry.

From this time forward progress was rapid and continuous.

In the second Silesian war, but two years after its disaster at Mollwitz, the cavalry had reached a high state of efficiency. Hohenfriedberg, Soor, Hennersdorf, and Kesseldorf are all names glorious in the annals of Prussian cavalry.

In this war it was the Austrian horsemen who felt and showed their inferiority to the Prussians; their excuse at Hohenfriedberg proved unmistakably which way the balance was inclined: "We could not charge the Prussians' right wing," they said, "partly because of the morasses that lay between us, and partly because they rushed across and charged us."

We are reminded of Cromwell's cavalry charging across the ditch at Marston Moor, and can recognise the same initiative and dash, the same confidence of the leaders in the riding of the men.

Then followed ten years more of peace—1745-1756—and at the end of those ten years, that is, in the early part of the Seven Years' War, the Prussian cavalry first reached its zenith.

FREDERICK'S PRINCIPLES OF TRAINING.

We must now turn again to the King, and examine the methods by which he transformed the cavalry of Mollwitz into that of Rossbach, Leuthen, and Zorndorf.

During these years of peace Frederick had worked unceasingly at his own military development. The opinions he had formed in his war experience he now put practically to the test, and communicated to the Army in the form of instructions. His first care was the training of the leaders; he knew that the education of these to the same principles of thought and action was the only means by which to guarantee the co-operation of all parts of his Army when in the presence of the enemy.

"The campaigns which I have fought," he wrote, "have given me the opportunity to reflect upon those principles of the great art by which different Empires and States have triumphed or been overthrown. I have thought it right to communicate these ideas to those who stand next me in command, so that on half a word from me they shall understand my intentions, and when I am not present be able to act upon my principles."

The King strove continually to direct the military education of his officers towards what was useful for *war*. Under Frederick William they had learnt to drill; Frederick the Great taught them tactics.

He regarded manœuvres as the chief means of educating the leaders, especially in teaching them the use of ground, and he insisted far more upon their recognising the object of every movement than upon the repeated practice of the mere forms.

Prussia was still a small State, and surrounded on all sides by greedy enemies; her only chance, both in strategy and tactics, was to compensate for want of numbers by skill, mobility, and a vigorous offensive. Towards this offensive, therefore, Frederick's training was continually directed. In speaking of generalship, he writes: "It must become the common custom for Prussian generals to act in a way which in any other country would be considered rash; they must always be ready to undertake everything which it is possible for flesh and blood to carry out."

The spirit of boldness and energy which he infused into the Army as a whole was, from the very nature of cavalry, of particular importance to that branch of his Service. To return to detail.

In the first place, the greatest possible care was devoted to the individual training of man and horse. Just as the efficiency of all larger units depends upon the thoroughness of the training of the squadron, so the squadron can only be brought to perfection by the most careful individual instruction of each man and horse in the ranks. "The cavalry must be instructed man by man and horse by horse," was Frederick's order. "The officer must see that the men ride continually, so that each man can turn and twist his horse and be completely its master." He also said that "the day was wasted on which the rider had not exercised his horse."

Time does not admit of going into the details of the individual training, but those who care to do so will have their trouble well repaid. The point that stands out most clearly is that Frederick never mistook the means for the end; he aimed at producing a good "campaign horse"—one that would go collected and in the rider's hand over the roughest ground and could be trusted to jump with safety all ordinary obstacles to be met with in the field. In the same way every rider was to have his horse completely under control and to have such complete confidence in his mount that he could devote his whole attention to keeping his direction and his proper position in the ranks.

As regards mounted movements in formed bodies, a totally new atmosphere was introduced; the key-note was mobility and the aim in future was to be the highest speed combined with precision and absolute cohesion.

The manœuvring power of Frederick's cavalry, certainly in large masses, has never been surpassed, and yet modern conditions make this power of rapid manœuvre of even greater importance than it was in his day. A large body of cavalry can only manœvre as well as its worst squadron, and though there are many squadrons in our cavalry which are admirably trained, yet it is open to doubt whether we have as yet attained to that uniformity of excellence which can alone permit of the precise and rapid manœuvre of really large bodies.

Constant exercise in the "rally" was another point on which great stress was laid. It was carried out daily, not only after an attack, and was practised over all sorts of ground. "The men are not to look for their original places in the ranks, not even for their proper troops, in order that the squadron may be rallied the quicker. The order does not matter only that the men are there."

"I do not want a mêlée," he says, "the cavalry must charge knee to knee."

He aimed at decisive results, and these are only to be obtained by the knee-to-knee charge, with the fixed determination to ride the enemy down or to force him to seek safety in flight.

The King at this time personally supervised the training and was his own inspector of cavalry.

From time to time he summoned the higher leaders from the farthest parts of Prussia to Potsdam or Pomerania that they might see his methods with their own eyes. On these occasions he would sometimes take command of a squadron himself in order to make perfectly certain that they understood what he wanted. He thus secured that uniformity of system and training which alone made it possible to manœuvre 40 or 50 squadrons hastily collected from widely separated garrisons.

At his inspections he was most particular that the cavalry should move over every sort of country; he would often take up a position wherever he happend to be and make large bodies of cavalry charge towards him, criticising severely if the ranks became disordered by the rough ground.

He set up as his ideal that "the Cuirassiers and Dragoons should be as adroit as the Hussars," that "the Hussars should be able to charge with as much cohesion as the heavy cavalry." This ideal he fully attained, and without damaging the special qualifications of each branch.

As efficiency increased so the King's demands on the cavalry became greater. In 1750 he lays down that in approaching an enemy 1,200 yards away, the first 600 are to be covered at the trot, the last 600 at a good gallop. Four years later he demands 4,000 yards at the trot, 1,800 at the gallop, and the last 300 to 400 at full speed.

While constantly reminding leaders of the importance of individual training as the necessary foundation of the whole, the King was careful to afford them opportunities of handling large masses, and in his camps of exercise he often assembled as many as 60 to 70 squadrons.

Such, then, were the methods of training of this great cavalry soldier; but in addition to his untiring zeal for efficiency he possessed a delightful human personality which called forth the complete devotion of all with whom he came in contact.

One story may here be told to show the love and confidence with which the Army regarded him, and the personal relationship which existed between them.

Late in the evening on the eve of the battle of Leuthen, the King rode into the bivouac of the Life Guard Cuirassiers. The men were standing round the fires and bade him a cheery "Good evening" as he rode up. Some old veteran asks: "What is thy news, then, so late?"

"Good news, my lads; to-morrow you will beat the Austrians roundly." "That we will, by God," they answered. "But just think of their position and how they have entrenched," said Frederick. "And if they had the devil in front and all round them we will knock them out, only thou lead us on."

"Well, I will see what I can do; now lay you down, and sound sleep to you." "Good-night, Fritz," answer all, and the King rides on in the dark to the next regiment.

The Cavalry in War.

Having considered the principles on which it was trained in peace, it is now time to examine the cavalry at work in war.

Armies at this time moved very slowly, and remained closely concentrated both at the halt and on the march; for this reason no great necessity was felt for strategical reconnaissance as now understood.

The imperative need for this arose later on. From the time of Napoleon onwards all campaigns have shown the vital importance of such reconnaissance in order to ensure "strategical liberty" for the commander of an army. This liberty can only be secured by the right use of cavalry—the strategical instrument of the Commander-in-Chief.

Modern conditions make strategical liberty more important than ever; the enormous masses of troops employed and the wide fronts on which armies operate make it increasingly difficult to alter dispositions once made, or to assign to an operation a new objective. In other words, the strategic direction of armies has grown in importance, and, as an inevitable consequence, the value of good cavalry has increased accordingly.

Yet there is no reason why Frederick the Great should not have made more use of his cavalry as a strategical instrument. Cromwell had set the example nearly 100 years before, and the method in which he employed his cavalry before the battle of Preston must have been known to Frederick, who was a great student of history.

The instance is worth recording:—In 1648 a Scottish army under Hamilton crossed the English border and advanced southward along the western coast. Cromwell, who was with the English army about York, nearly 100 miles away, at once pushed forward to the Pennines a force of cavalry under Leslie. This cavalry not only kept Cromwell constantly informed of the position of the Scotch but also effectually prevented the latter from gaining any information. The result was the complete surprise and almost total annihilation of the Scottish army at Preston.

Frederick certainly laid the greatest stress on reconnaissance, but it does not appear to have been carried out to any great distance. For instance, in the advance on Lobositz the Duke of Brunswick-Bevern, when at Fishbach, had Hussar patrols on the Elbe about 10 miles to the front. On a certain occasion in the Rossbach campaign Marshal Keith sent out 15 squadrons on reconnaissance; they made a fairly wide movement and covered about 30 miles in all without meeting the enemy, but they did not touch any point more than 10 miles from where they started.

In the same campaign the King himself cannot have had patrols very far to the front, as he received the first news of the position of the allied army when he was only four miles away from them.

On the other hand, the tactical reconnaissance, when the enemy had once been located, was very thorough. This reconnaissance was usually entrusted to Hussars; but "Hussar service" was taught as part of the duty of all cavalry. The commander of the force often accompanied the reconnoitring squadrons.

On the day of the battle of Lobositz, at half-past five in the morning, the King rode out to the outposts to reconnoitre. There was a thick mist, and the Austrian cavalry was found covering the front of their army. To clear up the situation the King ordered forward a force of 16 squadrons. This reconnaissance led to a cavalry fight and the opening of the battle.

On the day before the battle of Gross Jaegersdorf the hostile camps lay about five miles apart. Early that morning 40 Prussian squadrons were sent forward to reconnoitre, the Commander-in-Chief, Field-Marshal von Lehwald, accompanying the reconnaissance. The Russian position was covered in front and flank by light cavalry, and the Prussian attack on these caused the Russians to occupy their battle positions. The reconnaissance successfully located the flanks of the position, and the squadrons then returned to camp.

Again, before Leuthen 50 squadrons were sent on in front of the advanced guard to reconnoitre the Austrian position; they were met by 5 Austrian regiments, and a cavalry fight ensued. The Austrian cavalry, heavily outnumbered, were driven from the field. The King, who had followed the victorious Hussars, was then able, with a small escort, to personally reconnoitre the position from the Schönberg.

These examples are sufficient to show that the same principles operated in the days of Frederick the Great which still hold good to-day. Information of any value had to be fought for then as it has to be fought for now; great cavalry fights took place in the endeavour to gain information, and heavy prices had to be paid before it was obtained.

Our "Cavalry Training" clearly lays down that the ultimate objective of our independent cavalry is to discover the enemy's *main columns*. The first obstacle will usually be the enemy's independent cavalry, but when that has been defeated there will still remain a second obstacle—the protective cavalry, which will have to be pierced or thrown aside before the information can be obtained.

These cavalry fights were not, in the days of Frederick any more than at present, the object in themselves; they were and are the means, and the *only* means, by which the end of obtaining information can be gained.

Great importance, too, was attached to reconnaissance of ground. Officers were often sent ahead to reconnoitre routes to be used, and all cavalry when manœuvring sent forward scouts, frequently officers, to examine the ground in front and report upon its practicability. We see frequent evidence of this careful reconnoitring. At Zorndorf Seidlitz found the boggy valley of the Zaber between him and the Russian right flank, against which he was operating. He sent officers and pioneers to reconnoitre it and to improve passages across it, marking the crossings with whisps of straw. This reconnaissance made possible his subsequent crossing to charge the Russian flank.

When waiting in positions of readiness, too, the cavalry were always careful to reconnoitre the ground in the vicinity so as to be able to deploy rapidly and operate at once in any direction required. Had their example in this respect been followed by the French in 1870, many disasters would have been avoided and some great successes might have been gained.

As regards the employment of cavalry on the battle-field itself, the King's usual plan was to draw them up in three lines on one or both flanks of the infantry.

The accompanying plan shows an "order of battle" issued by Frederick in 1748.

The first line was generally the strongest, and in it the intervals were small. The second line was about 300 yards behind the first, squadrons at wide intervals, and some of them often outflanking the first by about 150 yards. The third line, or reserve, stood about 200 yards in the rear of the second, the squadrons at wide intervals.

The principle of their employment was as follows:—

The first two lines were the attacking lines; the first was meant to ride down the enemy, and was therefore the strongest, and formed of Cuirassiers; that is, the heaviest men and horses. The second line was in close support of the first, its primary duty being to fill up the gaps and to attack any bodies of the enemy who might break through. It did not, however, merely follow the first line, but often manœuvred round its flanks and brought off a flank attack on the enemy's supporting lines, as, for example, at Rossbach. Dragoons were usually employed in this line, as they were held to be rather more mobile and capable of quicker manœuvre than the Cuirassiers.

The third line was often used as a general reserve for the whole army; it was nearly always formed of Hussars, the most mobile of the three sorts of cavalry. It was employed where most needed at any particular time to re-establish the fight or to protect the rear and flanks of the lines in front.

It was forbidden by regulations to completely use up all three lines until the battle was decided, and at least four squadrons were to be kept back in reserve. "Only when the enemy's infantry have been finally driven from the battlefield are these four squadrons to be thrown into the pursuit of it."

The above was the usual distribution and employment, but the King did not tie down the cavalry leaders to any particular form, and was quite content to leave them a free hand to adopt whatever formation they found most suitable.

No tactical unit higher than the regiment existed, and the grouping of squadrons was settled on each occasion by the order of battle.

As regards intervals between squadrons in line, the practice seems to have varied at different times. In one place we read of 12 paces between squadrons, in another of lines of many squadrons charging with no intervals at all.

In studying past campaigns, nothing stands out more clearly than the all-important influence exercised on cavalry by the quality and character of the leadership. With cavalry everything depends upon the initiative of the leader, his personality is the decisive factor; the battle of Kolin is an excellent example. On the one hand, the want of grasp of the situation, the lack of energy and dash of the 68-year-old Penavaire resulted in total failure. On the other hand, the brilliant leading and personal magnetism of Seidlitz, then 36, inspired his squadrons with the most devoted bravery in their attempt to avert disaster.

The Prussian cavalry at Kolin lost about 25 per cent. in men and 30 per cent. in horses. At this time, however, the cavalry considered themselves a means of deciding battles equally important as the infantry, and they were equally prepared to suffer losses.

The unfortunate expression of "death ride" for every cavalry attack entailing casualties, had not then been invented, and the higher leaders were not prevented from using their cavalry in battle by the thought that it was so valuable that it must avoid all losses. On the contrary, Frederick was of the same opinion as that later expressed by General von Schmidt: "This arm is far *too* costly to have any check placed upon its employment." He believed in his cavalry, and was careful to teach them to believe in themselves. He educated them up to a readiness to act and to a determination to conquer absolutely regardless of consequences.

This sound principle is apt to be forgotten, and not only the Prussian Army but our own as well has suffered from its neglect.

Writing of the Prussian cavalry in the war of 1866, Moltke says: "Our cavalry failed, perhaps, not so much in actual capacity as in self-confidence. But all its initiative had been destroyed at manœuvres, where criticism and blame had become almost synonymous, and it therefore learnt to shirk bold independent action."

Self-confidence, moral, is the very life-blood of cavalry, and moral is a delicate plant which must be carefully fostered.

Every officer would do well to ponder upon these words of Moltke's, and when acting as umpire to pause before giving his decision that "the charge was hopeless and the whole of the cavalry must be put out of action."

The principal features of Frederick's mounted attacks were these:—

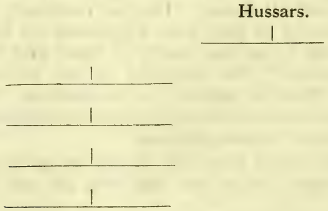
1. The simultaneous action of the whole force available, with one common object; no niggardly pecking with isolated detachments in succession, but a bold launching of a great mass against one objective.
2. The combination of front and flank attack; the chief blow in flank if possible.
3. Surprise.

As the best means of effecting surprise it was the constant endeavour to carry out the deployment for attack under cover, and when this was possible the attack was nearly always successful. Examples of this are seen in Ziethen's attack at Prague, Driesen's at Leuthen, and Seidlitz's two attacks at Rossbach.

The effect of cavalry has always been more moral than bloody; their successes counted by the tactical results produced, not by the actual losses inflicted. In producing this moral effect, surprise is one of the most potent factors, and all modern campaigns furnish incidents which show that "surprise is still the deadliest of foes."

The above principles are eternal; it is their application only which varies. Let us now see how the Prussian leaders applied them.

At the battle of Prague the Austrians had a mass of over 100 squadrons on their right wing. They were drawn up in four lines, one behind the other, and with a few squadrons of Hussars in échelon to the right front:—



The Prussians attacked this mass in front with 20 squadrons in one line. The Austrian first line awaited the attack at the halt, received it when quite near with fire from horseback, and then advanced a very short distance to meet it. The result was the overthrow of the Austrian first line; but the Prussians came to a standstill against the second line, were charged in flank by the Hussars, and had to withdraw.

The attack was soon renewed, this time with 20 squadrons in the first line, 20 squadrons supporting in second line, and a simultaneous flank attack on the Austrian right by two regiments of Hussars. A desperate hand-to-hand fight amidst dense clouds of dust ensued, and finally the Prussians, greatly outnumbered, again withdrew.

The Austrians then sounded the "rally," and began to re-order their lines, without however, taking any measure whatever for security against surprise.

Meanwhile Ziethen had arrived with 45 fresh squadrons, and deployed them *under cover* opposite the right flank of the Austrians, who at the moment of attack were still in four lines. Ziethen's formation was two lines—27 squadrons in the first line and 18 in the second.

The Austrians were completely surprised. A shout arose in the ranks that they were surrounded, and nearly the whole mass, seized with panic, broke and fled.

The Prussians then committed the mistake against which the King had so constantly warned them, and instead of rallying rushed wildly in pursuit.

A proper study of history would have saved the leaders from so fatal an error; they would have seen how often in the battles of Cromwell and Rupert the difference between rallying and failing to rally had meant the difference between victory and defeat. By thus getting out of hand the cavalry failed to be of any further use to their army for the rest of the day. They had made a night march the night before, had been saddled up for twelve hours, and had made three mounted attacks. This thoughtless and unnecessary pursuit put on the finishing touch, and completed the exhaustion of the horses.

At Leuthen the Prussian cavalry was divided into three principal masses, each of which brought off successful attacks against the Austrian cavalry. The following were the formations used:—

Of the 50 squadrons with the advanced guard under Prince Eugene, 30 attacked in first line, 5 delivered a simultaneous flank attack, and 15 followed up in support in second line.

Ziethen drew up his 53 squadrons with 23 in the first line, 20 in second line, and 10 in third line.

Driesen's attack is explained in the plan attached, which shows the situation at about 5 o'clock in the evening. At this hour, as it was beginning to grow dusk, 70 squadrons of Austrian cavalry, under Lucchese, formed in three lines, one behind the other, advanced to attack the left wing of the Prussian infantry.

Driesen was then in a position of readiness behind the Sophienberg, with 40 squadrons.

While his squadrons were resting, Driesen himself had remained constantly on the look-out and had carefully watched the whole course of the action. The ground all round his position had doubtless been thoroughly reconnoitred, and security patrols posted in every direction from which attack was possible. When he saw the Austrian advance, Driesen wheeled to the left by squadrons, advanced, still under cover of the hills, sufficiently far to outflank the enemy, then wheeled into line to the right and attacked. His formation was 25 squadrons in the first line and 15 squadrons in the second line, while he detached 10 squadrons of Hussars round his left to attack the enemy in rear.

At the same moment Prince Eugene, who had also been carefully watching the fight, detached 30 squadrons from the reserve to meet the Austrians in front. This brilliant combination, a concentric attack of 80 squadrons, from widely different directions, and acting by surprise, was completely successful.

The Austrian cavalry were routed, and dispersed in wildest confusion. Again the leaders were to blame for the surprise, not a single patrol had been detached from this mass of several thousand horsemen. Their formation, too, of four lines, each directly behind the other, was faulty; it allows of no manœuvring of lines in rear, and leading lines if overthrown are driven back on the top of those following, often throwing them into confusion.

The battle of Lobositz is interesting as showing a mistake in the Prussian leading.

Old Field-Marshal Gesseler, who was in command of the whole cavalry, carried away by his eagerness, took part in the charge of the reconnoitring squadrons.

After defeating the cavalry opposed to them, these squadrons came under infantry and artillery fire, and were finally driven back in considerable confusion. The remainder of the Prussian cavalry, about 60 squadrons, then charged; Gesseler, who ought to have been commanding them, was engaged in endeavouring to rally individual squadrons defeated in the first attack.

This attack was entirely contrary to the intentions of the King, who was exceedingly angry when he saw what had happened: it ended in the defeat of the whole Prussian cavalry, a result entirely due to the want of appreciation of his duties on the part of the cavalry commander.

It is the business of the supreme cavalry commander to direct the operations of his *main body*, it is his duty to decide the attack formation, the direction of the charge, and the moment for deployment. When once the squadrons have been launched to the attack he can only further influence the fight by the use of whatever force he has retained under his own hand with which to meet eventualities. The rest must depend upon the skill and initiative of subordinate commanders.

Perhaps the most remarkable of all the achievements of the cavalry in the Seven Years' War, was that under Seidlitz, at the battle of Zorndorf. As a concise and excellent account of this battle is given by Colonel Maude in his "Cavalry: Its Past and Future," it will only be necessary to refer to it very briefly.

On this occasion Seidlitz charged and rallied three times with the same squadrons, a feat which later, for no sufficient reason, came to be looked upon as impossible.

In his first attack, made with 33 squadrons, he surprised the Russian right by crossing ground which they considered impassable, but which, as previously mentioned, he had carefully reconnoitred and prepared for crossing.

His first line consisted of 3 regiments of Cuirassiers, that is, 15 squadrons; each regiment had but one crossing place, and that so narrow as to compel them to form in columns of half-troops. Crossing in this formation, each regiment formed line to the front at the gallop and attacked. 18 squadrons of Hussars followed in support, and completed the success of the first line.

In his third attack Seidlitz was in command of 61 squadrons. Owing to the habit of the Russian infantry of throwing themselves on the ground to let the cavalry pass, and then rising to pour a fire into their backs, he determined to form in three lines, each directly covering the other, and at 250 yards distance. In first line, which he led himself, he had 18 squadrons of Cuirassiers, 15 squadrons of Dragoons followed in second, and 28 of Hussars in third. There was no panic, and the Russians received the charge with stubborn determination and steadiness. They were only finally defeated after a long and desperate hand-to-hand fight, their losses in the whole battle being about the heaviest ever recorded in history.

THE BATTLE OF ROSSBACH.

The Battle of Rossbach, fought on the 5th November, 1757, furnishes a striking picture, both of the supreme military genius of Frederick the Great, and also of the fighting methods of his army as a whole. No battle shows more clearly the different elements which formed its strength, and in no other do we see those elements working together in better combination. First we are struck by Frederick's boldness, both in strategy and tactics, his comprehensive grasp of the situation as a whole, and the lightning rapidity of his decision. Hardly less admirable are the skill and certainty with which he handled the three arms on the battlefield.

Considered as a cavalry study, it is impossible to watch better squadrons at work under a better leader.

Before describing the battle it seems desirable to say a few words on the subject of the cavalry leaders.

The names of Ziethen and Seidlitz are known to almost everybody who has heard of Frederick the Great. Certainly they stand out above the others, and Seidlitz was probably the greatest cavalry soldier that ever lived. But there are many more names scarcely less famous in Prussian history, and known to-day to every cavalryman in the German Army. Yet most of these men were by no means geniuses, some of them quite the reverse. When Frederick heard of the brilliant attack of Driesen at Leuthen, which we have just described, he exclaimed in surprise: "What, Driesen, that fool?" and no one knew his men better than Frederick the Great. The fact is that a good system of training produces good leaders. Given such a system, and the opportunity for practice, men of quite ordinary ability can, if they will, fit themselves for the leadership of even large bodies of cavalry.

Seidlitz, at 17, had joined as a cornet a regiment of Cuirassiers, and at 20 took part with them in the First Silesian War. His first experience of the real business was in command of a troop of 30 dismounted Cuirassiers defending a village on outpost duty. Attacked by superior numbers of the enemy's Hussars, after some hours' defence with the rifle, Seidlitz found himself short of ammunition and determined to cut his way out on horseback. In this attempt his horse was shot under him and he fell into the enemy's hands. The King, who soon afterwards heard of his conduct, arranged for his exchange, and presently promoted him to a captaincy of Hussars. In 1752 he was made lieut.-colonel of a regiment of Dragoons, and in 1757 colonel of Cuirassiers. He had thus had experience of all three branches of the cavalry. The Seidlitz Cuirassiers were described by a contemporary as a "Pattern for the cavalry of the whole world; indeed, it is impossible to bring cavalry to a higher pitch of perfection than Seidlitz has brought this regiment."

A story is told of how at this time an anxious mother of a young Cuirassier came to remonstrate with the colonel about the dangers to which she thought her son was exposed. "I assure you, madame, there is no danger," said Seidlitz, "cats and cornets never break their necks."

Two days after the battle of Kolin, in which he had greatly distinguished himself, Seidlitz was made a major-general. When congratulated by old Ziethen on his promotion he said: "It was high time, Excellency, if they want to get anything more out of me; I am already 36." A few months later, on the morning of Rossbach, the King put him in command of all the cavalry present, passing him over the heads of two generals senior to him. "Gentlemen," said Seidlitz, on this occasion, "I have got to obey the King, and you have got to obey me."

At the time of the battle the position of Prussia appeared almost desperate. The North German allies had been driven back into Hanover by the French, a second French army was on the Rhine, the army of the Emperor on the march from the Maine to the Elbe, the Swedes were threatening an advance on Berlin, the Russians on East Prussia. All attempts to bring the Austrians to a decisive battle in Northern Silesia had failed.

As the only chance of success, the King determined to attack the now united French and Imperial armies.

On the 4th of November he found the allies in a strong position north-west of Rossbach, with an army of 90 battalions and 84 squadrons, in all, 64,000 men; Frederick had 27 battalions and 45 squadrons, a total of 22,000.

Even Frederick thought the enemy too strong to attack in the position they had taken up, and he withdrew his army that night behind the little Leiha stream, between Bedra and Rossbach, hoping that the morning would bring him the chance of the battle which he needed. By two o'clock next day the King was on horseback, reconnoitring with Seidlitz and his Hussars. The allies, too, were early astir, and by eight o'clock were on the march towards the south, Seidlitz at once sending information to the King.

Knowing that the allies were short of food, the King at first thought they were retreating, and made preparations to overwhelm their covering detachments on the Schortau Hill and the Galgen Berg. When, however, on reaching Zeuchfeld their main columns changed direction to the east, he at once determined to attack them. Orders were issued for the army to march off from its left and to move eastwards behind the Janus Ridge.

The allies, whose intention was to cut Frederick off from the Saal, took his movement to be an attempt to escape by Merseburg. They therefore hastened their march, and the cavalry pushed on some 2,000 yards in front of the rest of the army.

The Prussians, leaving seven squadrons of Hussars and one battalion near Schortau, moved off eastwards behind the Janus Ridge, the cavalry under Seidlitz trotting on in front.

Only a few minutes before moving off Seidlitz was put in command of the whole cavalry. His first act was to assemble his officers and explain his plan, which was to move under cover of the Janus Ridge, and, using the Janus Hill as pivot, to attack the heads of the enemy's columns. He moved off in a double column of squadrons, taking rather more than wheeling distance in order to give a broader front when he wheeled into line, as he knew the enemy greatly outnumbered him.

His right was covered by the Székeley Hussars on the Janus Ridge; making good use of their carbines, they secured his pivot of manœuvre and effectually prevented the enemy's patrols from watching his movements. He himself, with his staff, and perhaps some of his leaders, rode along the ridge keeping the enemy in view.

Seidlitz seems to have preferred columns of squadrons to the heavier and denser formations, such as mass or double column of troops, and doubtless found that it had many advantages. Being more elastic there was an avoidance of checking, lengthening of the column and bumping whenever obstacles had to be crossed, the increased distance between ranks gave the horses room to jump, there was less trouble from dust, leaders could see better and horses got more air.

After passing the Janus Hill Seidlitz changed direction half right, and then, still under cover, wheeled into line to the right and halted. He formed up in two lines, 15 squadrons of Dragoons in the first line, 18 squadrons of Cuirassiers in the second line, covering a front of 1,300 to 1,400 yards. The Székeley Hussars, having finished their task of protection, had rejoined the main body, and were now in the third line a few hundred yards on his left rear.

By the time the cavalry had reached the Polzen Hill, Frederick had got 18 heavy guns on the Janus Hill, and now opened a sudden and effective fire on the hostile cavalry, throwing them into considerable confusion. Seidlitz was watching for the opportunity, and when the enemy's cavalry were within about 1,000 yards he gave the signal to attack. The enemy were completely surprised; their deployment was hampered by the road cutting—a serious obstacle—10 to 12 feet deep, and practically forming a defile 700 yards broad immediately in front of them, and the fall of the ground was also in favour of the Prussians. In addition, the artillery on the Janus Hill were able to continue effective fire up to the moment of actual collision.

Amidst the praises heaped upon the Prussians, the prompt action of the French battery, which was engaging the guns on Janus Hill, is apt to be overlooked. Directly the Prussian cavalry appeared over the ridge the battery commander turned his fire upon the charging squadrons, and was able so effectually to influence the result that the first collision proved indecisive. Seidlitz's first line was met by two Austrian regiments, and the result was one which is most unusual in cavalry charges. Both sides rode home, but no part of either was able to break through the other—a proof of equal daring and determination and equal cohesion in the ranks.

Seidlitz, who personally led his second line, now launched it to the attack, and the Székeley Hussars simultaneously attacked the enemy's right flank. The whole thus brought off a converging attack as shown in Plan I. of the battle, which resulted in the enemy's squadrons being overthrown and put to flight. Meanwhile 24 more French squadrons had arrived, and now attacked the Prussians on both flanks. While only a few Prussian squadrons had pursued the defeated Austrians, the remainder had rallied, and were in consequence quite ready to meet the new attack. They now charged again, overthrowing the French cavalry and capturing the French battery. The whole allied cavalry then turned and fled.

Seidlitz, who had been wounded in the fight, at once called off his squadrons from the pursuit, quickly rallied them behind the hollow road, and then moved to a position of readiness near Tagewerben. Here, completely hidden by the ground, he again formed up in two lines and took the opportunity to rest his horses, ready at a moment's notice to intervene in the main battle or to launch his squadrons in pursuit. He himself remained on the lookout watching the course of the action.

Meanwhile the Prussian infantry, having completed their deployment behind the Janus Hill, advanced to the attack. The allies were completely surprised, and the fire of seven battalions in conjunction with the artillery sufficed to throw them into considerable confusion.

On seeing the enemy thus disordered, Seidlitz again sounded the charge, and, riding over their few remaining squadrons on his way, crashed into the flank of the hostile infantry. Panic at once became general, and the whole allied army broke into flight. The Prussian artillery continued to fire on the retiring masses as long as light lasted, and the infantry pursued as far as Obschütz. The cavalry, who had done a very hard day's work, were called off when darkness fell.

The King's dispositions for the night should be noticed: While the infantry bivouacked on the high ground between Obschütz and Markwerben, the cavalry were withdrawn behind them and put into billets in Reichswerben, Tagewerben, and Storkau. While the casualties of the allies amounted to 650 officers, 9,500 men, and 72 guns, the Prussian losses were only 30 officers and 518 men killed and wounded, 4 generals, including Seidlitz, being among the latter.

The infantry fight had only lasted 15 minutes; two Prussian battalions had expended from 12 to 15 rounds each, 5 others a few less, while the remainder had not fired a shot.

Next day the army moved forward in pursuit, and by the evening of the 8th the cavalry reported that the whole country this side of the river Gera, 50 miles from the battlefield, had been swept clean of the enemy.

The chief credit for this amazing victory belongs, of course to the King. His was the big decision, his alone the responsibility. His conduct of the battle shows the highest possible skill in the use of all three arms combined. He knew where to retain personal control, where and to what extent to give his leaders a free hand. The discipline of the troops, too, and the skill of the leaders, cavalry as well as infantry, were the results of his ceaseless efforts. Nothing can show more clearly the effect of his training than the mere possibility of manœuvring as a single body a mass of nearly 40 squadrons handed over to a new leader on the battle-field itself.

Seidlitz and his cavalry require no further praise; their performance remains as a model of perfection to all times. It must, however, always be remembered that under another Commander-in-Chief they would probably have found themselves covering with dismounted fire the Prussian retreat to the Saal. In Seidlitz's handling of the cavalry his self restraint was quite as important a factor as his magnificent dash. The charges were well timed and well carried out; squadrons well closed, mutual support of all three lines, combination of front and flank attack, and above all *surprise*.

The whole battle shows the most admirable co-operation of the cavalry with the rest of the army, and the perfect control which the leaders exercised over their troops.

CONCLUDING REMARKS.

During the first and second Silesian wars the main strength of Frederick's Army had lain in the infantry, and it was only in the Seven Years' War that the cavalry were able to perform their fair share in deciding the issue on the battle-field. This fact shows that their early failure and subsequent success was not a question of the firearms of their enemy, but depended entirely upon their state of efficiency and the skill or want of skill in the tactical leading of the officers.

A charge against unbroken infantry, fresh and ready to receive it, no more promised success in those days than it does to-day.

We need not wait for the days of magazine rifles and Q.F. guns to find instances of such failures. There are several in the battles we have been considering.

In one important particular, indeed, the odds against the cavalry were greater then than they are at present. In the time of Frederick, infantry in line three deep could fire thirteen shots a minute per yard of front, and the projectile was an 8-bore bullet, which brought a horse down in a single stride. The small-bore rifle of to-day has very small stopping power in comparison, and I have myself seen a spring buck shot through the heart with a Mauser bullet travel over half a mile before it stopped and fell dead. It will take many such bullets to stop a line of charging cavalry determined to reach the firers, cost what it may.

But war does not consist of isolated duels between the different arms. It is by the close and effective co-operation of all three arms that battles are won, and the value of cavalry on the battle-field depends upon the skill with which its leaders can take advantage of situations created by the other arms.

In the future as in the past, leaders will sometimes make mistakes, precautions will be neglected, troops will become exhausted and demoralised. That "the long-fire fights of the present are more destructive of the moral and physical energy of the infantry than the close-quarter conflicts of the past" is amply demonstrated by the events of the recent war in Manchuria.

The Austrian, Captain Spaits, in a recent book, gives his personal experiences of the Russian retreat from Mukden. He describes the terrible condition of the crowds of fleeing soldiers, many of them weaponless, and all vestiges of discipline vanished. When these masses of fugitives, horse and foot mixed together in hopeless confusion, hungry and frozen, reached the Puho River, a block occurred owing to difficulties in crossing. About three o'clock in the morning part of an ammunition column, fleeing from the Japanese, broke at full gallop into this mass of shivering humanity, upon which the wildest shooting began in all directions, and the most complete panic set in.

"At such moments," to quote Captain Hoeing, "it is quite a matter of indifference whether these remnants carry a repeating rifle, a flint musket, or a pitchfork, for the men's nerves are overstrained and their weapon counts for nothing."

All campaigns, especially the latest, furnish examples of such demoralisation, and prove the utter fallacy of statistics based on rifle range experience.

To again quote Hoeing: "If battle-fields were simply rifle ranges, then the effect so generally attributed to firearms to-day would certainly be due to them. Battle-fields, however, are not rifle ranges, but a confused mass of heights and valleys, of fields and ravines, of woods and villages, which give to each arm a field for its action, provided, of course, that the arm is capable of manœuvring in such country."

The moral of this seems to be, first, that the cavalry leader must be a tactician, and must study the other arms in order to be able to recognise the opportunities which will inevitably occur; and secondly, that he must know and have confidence in the capabilities of his own arm and develop to the utmost its tactical knowledge, its speed and manœuvring power. By this means only will the cavalry be able to act by surprise, and thus make the most of the possibilities which the future certainly has in store for them—possibilities even greater than those which the Great King and his leaders knew how to turn to such glorious account.

Colonel F. D. V. WING, C.B., Staff Officer for Royal Horse and Field Artillery (Aldershot Command):—This admirable lecture has brought out some very interesting points, to one or two of which I should like to refer. There is one point in Frederick the Great's campaigns which is especially worth noticing, namely, that in these campaigns the inauguration took place of any methodical co-operation of artillery with cavalry. The artillery in those days was very much hampered by being non-mobile. Major Greenly has told us how Frederick the Great improved the mobility of his cavalry, and he no doubt greatly improved the mobility of his artillery as well. In the battle of Rossbach, in one of his later campaigns, the co-operation of the artillery and cavalry was especially noticeable, when 18 guns were sent forward to an advanced position, where they could fire at the advancing column of the enemy's troops. They were used apparently as a pivot of manœuvre by Seidlitz, who worked round on the flank and attacked the column with such success that he rode through it four times, and commenced the great Prussian victory which was gained on that day. It is very likely that Frederick the Great from the success on that day inaugurated two years later (1759) the horse artillery—an example we did not follow till 1793. Though our guns have improved enormously since those days, I think the tactical action of horse artillery and cavalry is very much the same now as it was then. There is no doubt that they must reserve their long-range fire for those many occasions when they will be used as field artillery, and the horse artillery, when acting with cavalry, must make up their minds to get up at all hazards to a position where their fire will not be masked, and whence they can fire direct and accurately on to the enemy's advancing squadrons up to the moment of impact. Lessons from these campaigns of 150 years ago are very excellent studies for us now, and we are very much indebted to Major Greenly for his able lecture.

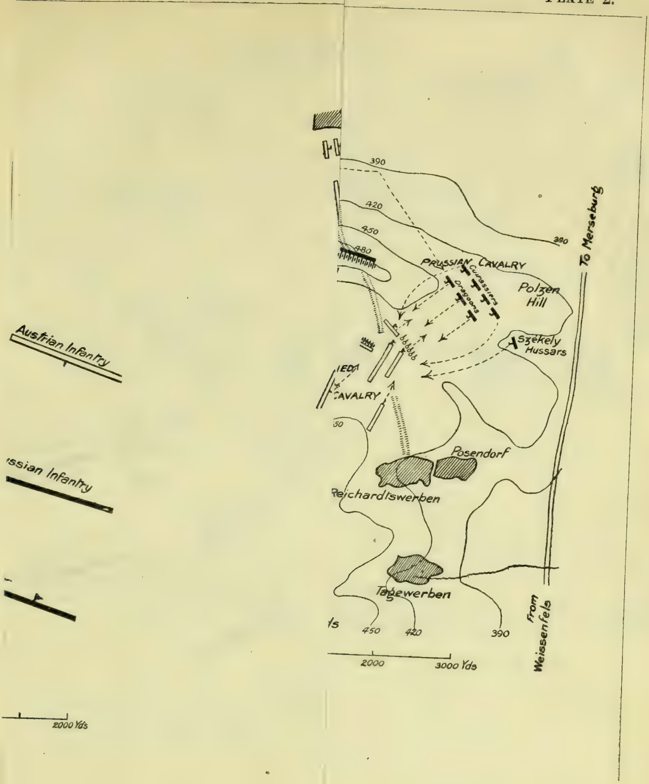
Major G. W. REDWAY:—I think those who have most studied the subject of tactics in the 18th century will be best able to appreciate the very able lecture to which we have listened. I have studied the subject somewhat during the last few years, and having followed the lecturer very closely, I noticed that Major Greenly has gone greatly into detail, and I hope that when the lecture is published he will be kind enough to quote his authorities for some of these details, which are not found in any general history. That brings me to the point on which I wish to say a few words, and that is the question of deployment. The word "deployment" has been used twice by the lecturer, instead of an expression which I expected would occur often in his lecture, namely, "wheeling into line." I should very much like to know whether Major Greenly has found any evidence that "deployment" was known and practised by Frederick the Great. We are generally under the impression that deployment, which was the special feature of the later French revolutionary system, was invented by the Frenchman Mesnil Durand, and that in Frederick's time battle formations were based on wheeling into line from the pivot flank, that is, the "directing" flank of the column. It is a very interesting point, and a vexed question among students, and if the lecturer has discovered any evidence that infantry and cavalry formed line *to the front* in those days, one would like to know something about it. Even so late as the Crimean period Captain Nolan, of Balaclava fame, in his wonderful book on cavalry, which the lecturer probably knows, shows that the old "right in front" or "left in front" conditions for manœuvring were still in vogue, and he loses no opportunity of ridiculing the system. If in Frederick's time the military world did know anything about "deployment," that is, the unfolding of column into line, the forming line *to the front* as distinct from wheeling into line *to the flank,* it would be interesting and valuable to have evidence of the fact. Another point the last speaker alluded to, and that is "horse" artillery. It was on an occasion in 1759 or 1760, towards the close of the Seven Years' War, and during a cessation of hostilities that Frederick wanted to engage in a strategical reconnaisance, and since he could not take infantry with him, he organised a mounted force. He also wanted to take guns with him, and knowing he could not have foot artillerymen, he mounted his gunners. I think that was the earliest experiments in what we call "horse" artillery, and it was used in connection with strategical reconnaissance, which is the particular point I want to emphasise. The only other thing I wish to refer to is a question of what I suppose we still call Grand Tactics. I think the lecturer did not perhaps sufficiently emphasise the fact that, according to the general histories of the subject, Frederick utilised his cavalry as a means of gaining manœuvring power at a time when infantry was singularly immobile. Owing to the so-called "linear tactics" which then prevailed, if you once got a body of troops in column of companies you could only form line in one way, and when you got infantry into line you could not shift them to either flank without again wheeling the companies into column. That is what I have gathered from what I have read, and how Frederick secured his great successes was by taking advantage of this curious habit of anchoring infantry to one spot. As Hamley says: "He walked round the Austrians like a cooper round a tub." But he did it by means of mounted troops. He could not utilise his infantry for such a purpose, because they also were immobile under the conditions of training at that period. In later days cavalry's mission was said to be that of sacrificing itself to gain time for hard-pressed infantry. Frederick had no such ideas; he used the cavalry as his arm of offence. He won his battles with his mounted troops. I think that might be more emphasised in the lecture. I do not think more need be said, except in high praise of Major Greenly's lecture. The difficulty of all lectures at this Institution is that the better the lecture the less room there is for discussion. That is the unfortunate situation to-day.

Brigadier-General Sir H. S. RAWLINSON, Bart., C.V.O., C.B., Commanding 2nd Infantry Brigade (Aldershot Command):—I am rather diffident of speaking on this subject amongst so many cavalry officers; but with regard to the view expressed by the lecturer as to cavalry training for cavalry officers, I think we shall be all in agreement. There is one point, however, which I would like to emphasise, and which has to some extent been omitted by Major Greenly. We all agree with the necessity for the most careful training in leadership by squadron, regimental and brigade commands, and nothing is better teaching for them than the study of history and the tactics employed in the various actions which Major Greenly has described to us. But there is another point in this connection which I think cavalry officers should thoroughly appreciate and know, and that is the immense importance and value of ground. The study of the value of ground and a quick eye for country are important matters for any officer, but they are absolutely essential to cavalry leaders on the battle-field, where rapidity is of the essence of success. To visit past battle-fields, where cavalry actions have taken place, and there to realise the undulations of terrain which were the prime cause of the various movements that were made, furnishes, I think, the very best teaching for both cavalry officers, as well as for officers of other branches of the Service.

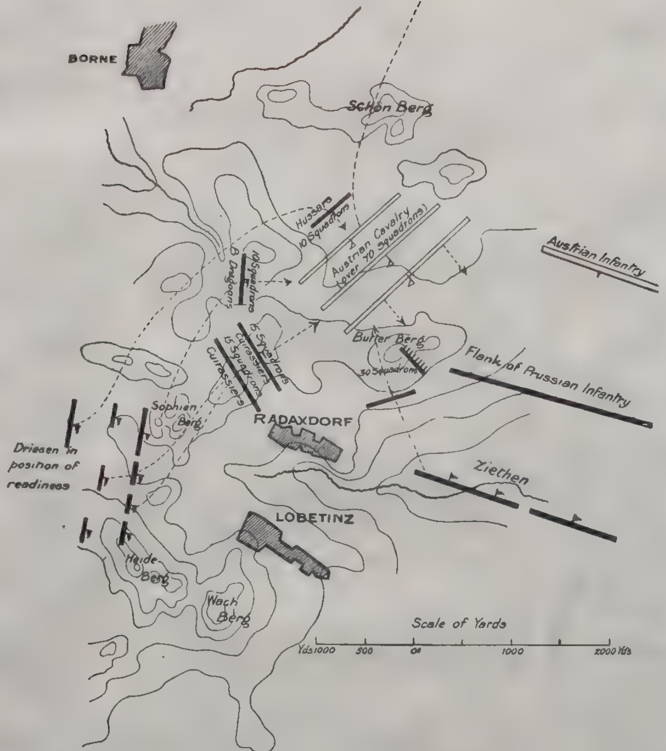
The CHAIRMAN (General Sir J. D. P. French, G.C.V.O., K.C.B., K.C.M.G., Inspector-General of the Forces):—I am very sorry that no more cavalry officers will speak on this great subject. I therefore propose to say a few words, generally reviewing what has been said, and expressing an opinion on the points which I think we should most usefully attend to with regard to the lecture. All who have the efficiency of the cavalry service at heart—and I will go further and say all who desire to see the British Army maintain its great traditions in the field—must feel deeply indebted to the lecturer who has so ably and concisely put before us the fundamental principles upon which alone cavalry can be successfully employed in war—principles of everlasting truth and steadfastness which were first preached and practised by one of the greatest warrior monarchs the world has ever seen. When I say Frederick was the first exponent of these principles, I am not perhaps strictly accurate, for the lecturer has himself referred to the achievements of Cromwell's cavalry, and no doubt if we go back to days even more remote we shall find the same spirit animating successful cavalry in war. The lessons we can learn from this lecture are so numerous and so weighty that it is difficult in commenting upon them to give prominence to one more than another; but in reviewing the subject I should be inclined to base the whole discussion upon those pregnant words which follow the lecturer's remarks on the battle of Leuthen, on page 1309, taken in conjunction with Frederick's instructions to his cavalry on page 1304. These paragraphs run as follows: "Information of any value had to be fought for then as it has to be fought for now; great cavalry fights took place in the endeavour to gain information, and heavy prices had to be paid before it was obtained. Our "Cavalry Training" clearly lays down that the ultimate objective of our independent cavalry is to discover the enemy's main columns. The first obstacle will usually be the enemy's independent cavalry; but when that has been defeated there will still remain a second obstacle—the protective cavalry—which will have to be pierced or thrown aside before the information can be obtained." "These cavalry fights were not in the days of Frederick any more than at present, the object in themselves; they were and are the means—and the only means—by which the end of obtaining information can be gained." Then amongst Frederick's instructions comes this very important one: "Squadron commanders are made responsible that not a man uses carbine or pistol in the mounted attack; the enemy is to be ridden at sword in hand." The ability to beat the hostile cavalry opposed to him must ever be the first consideration in the mind of one who aspires to lead cavalry in war; and why is this? Because then, and not till then, a field of enterprise will lie open to him which is incalculable in its possibilities, and endless in its far-reaching results. I should like to quote here the remarkable words of one of the ablest writers on military subjects of the present day. Colonel Kiggell, in the revised edition which he has published of Hamley's "Operations of War" says: "It is true that new inventions have necessitated a perpetual development in tactical method, but history shows clearly that all successful tactical methods have been based on great fundamental principles which are as changeless as the human nature on which they depend." Another writer on the same subject says as follows: "It is quite true that the introduction of improved arms has produced very considerable modifications in the method of fighting, but these modifications are not so changed as the growth and development of principles that have been known for hundreds of years. And it is the most dangerous thing to ignore all experience obtained prior to the introduction of improved arms, for it is only by a careful study of the development of tactics that the true direction in which improvement is possible can be determined." In view of the doctrine expressed, established and practised by all great military Powers of the world, that the only main elements in a cavalry fight comprise the man, the horse, the sword and lance, with what force do these extracts from military writers of great ability, who are not horse soldiers, come home to us as cavalrymen? I should commend, then, cavalry soldiers to search this lecture and the history of the times to which it refers, in the first place, to learn how cavalry can be best prepared to overthrow their enemy in the field. The lecturer tells us clearly where to begin and how to proceed, in putting before us the instructions of the great King, and how at Leuthen and Rossbach the peace practice of these instructions bore fruit. They were to begin with the individual man and horse, then the troop, the squadron, the regiment, and the brigade were to be progressively and successively brought to efficiency and perfection, and finally, the keynote of all was to be a mutual understanding permeating throughout the whole force. These instructions were obeyed to the letter, and with what result? The attainment of such mobility and manœuvring power as enabled large bodies of cavalry to intricately manœuvre in secrecy and under cover of hills and features of ground, to ensure a sudden deployment and surprise, and the almost immediate rout of the immobile, unwieldy Austrian cavalry. The lecturer has pointed out very clearly to us that Frederick never tired of telling his generals that this primary *rôle* of cavalry is but a means to an end. The hostile cavalry is defeated and driven from the field. What then? The same dash, the same energy, the same endurance, but combined on the part of the leaders with a profound and far-reaching knowledge of strategy and tactics, and the higher art of war, and on the part of the troops a thorough training in musketry and efficiency in the use of the rifle. I have always held that the *rôle* of cavalry, when victory over its own arm has made the road clear to its enterprises, is summed up in three words—reconnaissance, deception, support. We have heard that the cavalry in the time of Frederick was somewhat deficient in the practice of far-reaching reconnaissance. May not this well have been because its leaders were not profound students of the higher art of war, a knowledge of which alone can enable mounted troops to direct their researches so as to make the most important and valuable discoveries, and effect the most thorough clearing of the fog of war? Let cavalry leaders remember this, and understand that to be of real use to the Commander-in-Chief they serve they must themselves possess the knowledge and education—only to be acquired by close study—to enter into his plans and justly appreciate the military situation on both sides. The idea of surprising the enemy is the very spirit and life of Frederick's instructions; but to surprise we must know how to deceive. What said Stonewall Jackson? "Always mystify, mislead, and surprise your enemy"—one of the principles which Henderson describes in his "Science of War" as "the foundation and crown of all strategical method." Now, I am one of those who believe that an enormous field of useful work is open to leaders of mounted troops in this work of deception and consequent surprise. But here again a most intimate knowledge of battle-field tactics is essential, and I earnestly commend this study to cavalry leaders. Given this knowledge, many kinds of ruses can be studied and thought out which only require constant peace practice to be effectual in war. Then the immense mobility of a highly-trained cavalry renders its power of bringing speedy succour and support of immense value, whether strategically in the theatre of war or tactically on the field of battle. The rifle now in the cavalryman's hands will render this support of infinitely greater value than formerly. Whether we consider the cavalry fight, or the enterprises which its successful conduct opens up, it is the true cavalry spirit which must ever be the corner-stone of all instruction and preparation, and it is this cavalry spirit which breathes through every line of the admirable lecture which we have heard this afternoon. Finally, I should like to draw particular attention to the vivid picture which the lecturer has drawn of the Prussian army, assailed on all sides by vastly superior numbers, and securing the victory against tremendous numerical odds by their superior training, efficiency, and knowledge of war. These constitute some of the principal factors in the *moral* of an army. We all remember Napoleon's great dictum, that in war the moral was to the physical as three to one. Had

Napoleon lived in these days I am inclined to think he would have increased his estimate in favour of the moral factors in estimating their relative importance. To us soldiers of the British Army, who may also find ourselves assailed by vastly superior numbers, the example of the great Prussian King and his army furnishes a special lesson. Let us do our best to profit by it, and increase to the utmost those *moral* factors of which I have spoken. In conclusion, I am quite sure I shall be only anticipating all your wishes if I express our most grateful thanks to Major Greenly for the admirable lecture he has given us.

PLATE 2.

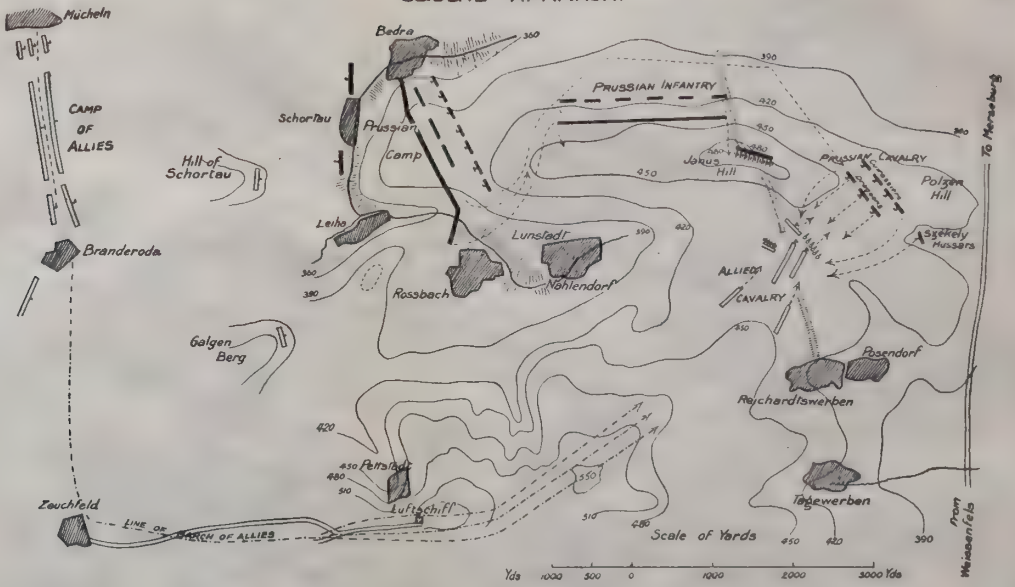

390
420
450
480
PRUSSIAN CAVALRY
Cuirassiers
Dragoons
Polzen Hill
Székely Hussars
CAVALRY
Posendorf
Reichardtswerben
Tagewerben
450
420
390
To Merseburg
From Weissenfels
2000
3000 Yds
Austrian Infantry
Infantry
2000 Yds

LEUTHEN
DRIESEN'S ATTACK.

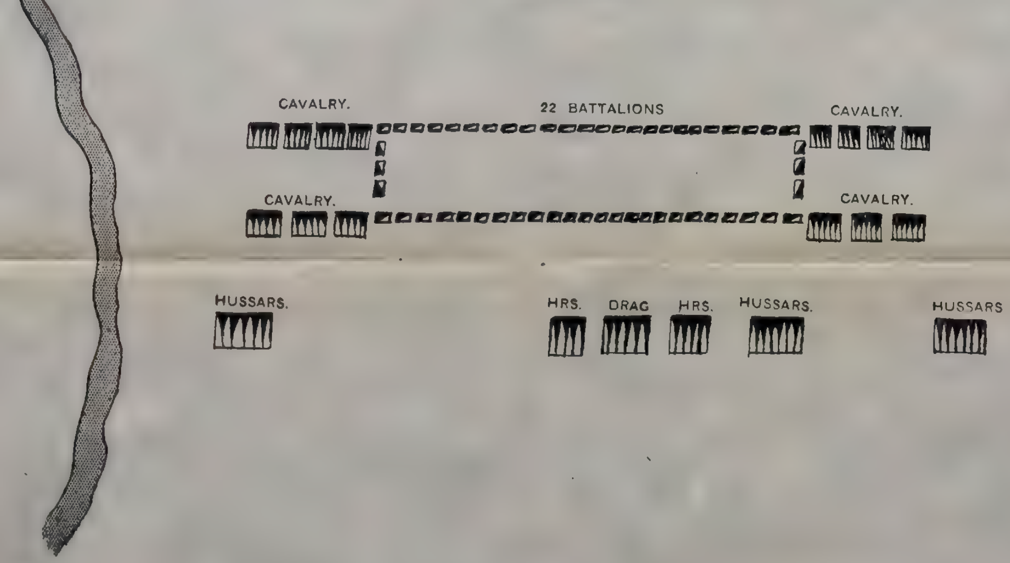


I

BATTLE OF ROSSBACH
SEIDLITZ' 1ST ATTACK.

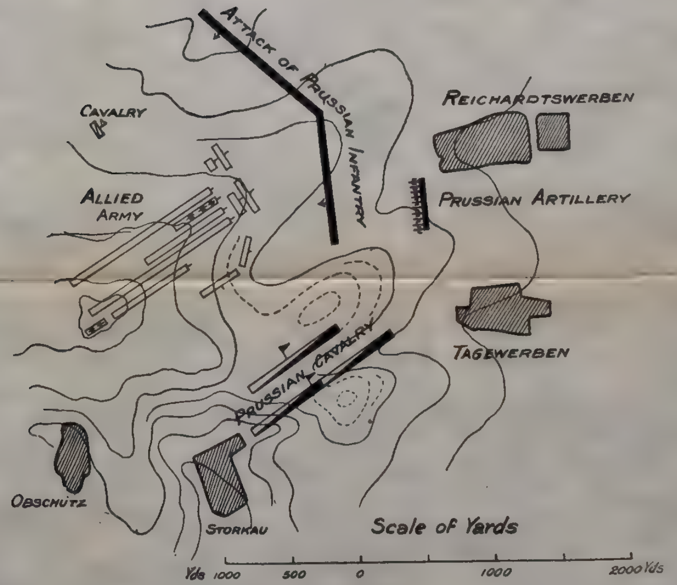


ORDER OF BATTLE.
(ISSUED 1748).



II

BATTLE OF ROSSBACH
SEIDLITZ' 2ND ATTACK.



J. J. K. & Co., Limited, London.

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from September JOURNAL, p. 1189.

CHAPTER VIII.

"MUCH ADO ABOUT NOTHING"—THE CRUISE OF 23RD JUNE—"GOD HAS HELPED US"—THE UNEXPECTED RETURN—THE BEGINNING OF THE END—AGAIN THE OLD GUARD DUTIES—THE CRUISER IN THE ROADS—SUPPORTING OUR TROOPS FROM SEAWARD.

ON the afternoon of 18th June the greatest activity prevailed throughout the harbour and the basins of Port Arthur. The men-of-war hauled their bows round towards the channel leading out, tugs were taking our transports into the corners of the basins, so as not to block the fairway; here coals were being taken in, there stores or provisions. Floating cranes were lifting the buoys and moorings which had been laid out temporarily; yard craft were removing the second and third booms. The fact that our squadron was to go to sea was an official secret, but all this animated scene proclaimed it aloud. Even a landsman was bound to notice it. It was enough to make one lose courage; I should have liked to cry out aloud: "My friends, why all this to do?"

On 20th June high water was at 2 p.m. All preparations for going to sea could have been completed by then if commenced at daylight. Did "they" not know what was common knowledge in the squadron, in the port, in the town, in the fortress? Did "they" not know that the Japanese were accurately and immediately informed of our every step, every movement? Did "they" not know that the Japanese invariably had knowledge of the plans and intentions of our leaders, thanks to our "bureaucratic" methods in treating secrets? Why, the Japanese were often better informed than we officers, who were reduced to guessing.

Since that strange midnight encounter of 15th June the Japanese had completely disappeared. Our mine-sweeping flotilla cleared a channel to the S.S.E. and buoyed it without any interference on the part of the enemy. The searchlights were diligently worked but could not discover anything suspicious during those nights. When the channel was searched once more to make doubly sure, no new mines were to be seen. The Japanese minelayers had quite given up operations in our roads. It looked as if we really might hope to surprise the enemy, if we went out unexpectedly. Perhaps their main body was off Vladivostok; perhaps they were so firmly convinced that we would undertake nothing, that their ships were taking in supplies, making good defects, or simply resting in Japanese ports. Such Japanese vessels as had been left behind to keep up the blockade might have gone into some bay (their flying base) to coal. Who could know?

In any case it appeared to me to be perfectly incomprehensible that our very obvious preparations had been begun several days before the date of sailing. But worse was to follow. At 5 a.m. on 20th June the *Sebastopol* and *Poltava* received orders by signal to raise steam; these two ships had cylindrical boilers; at 7.30 a.m. the same order was signalled to all other ships. Then came the general signal: "Prepare to sail at noon."

Soon after 8 a.m. a hectographed order reached us; in it the Admiral communicated the happy intelligence that the repairs on the damaged battleships were completed and that the entire squadron was once more ready for sea. He then called upon God and the Heavenly Hosts, and declared that we would now go to sea and once more start active operations.[1] At the same time was published a special number of the *Novy Krai*, a newspaper which appeared regularly in Port Arthur. In this number the above-mentioned orders were printed as a sensational piece of news. It was clear the editor had certain connections which permitted him to obtain a copy of the order the evening before.

At 10 a.m. the admirals and captains were suddenly summoned to the *Tsesarevitch* (flagship). At 10.20 she hoisted the general signal: "Let fires die out."

"What is it"—"What has happened?" the officers asked me, surprised and scared.

"I don't know; wait till the captain is back, he will be able to tell us."

Meanwhile, steam-boats were going from ship to ship calling in again the above-mentioned order; we were ordered not to register it. At the same time a perfect army of orderlies rushed through the town and all over the harbour to confiscate that fatal number of the *Novy Krai.*

---

[1] Is it not remarkable how closely this order resembles the solemn Army Order, in which General Kuropatkin announced the beginning of offensive operations?

The torpedo lieutenant was beside himself with rage. "Quite useless," he mocked; "the Japanese have already read the order—probably they had a proof sheet."—"Much ado about nothing," grumbled the paymaster; he had always taken a pessimistic view of things.

Our spirits could not have been at a lower level than they were.

The captain returned; we gathered that "they" had thought better of it at the last moment. The day had been an unfortunate choice, it was said, as high water was in the afternoon. No sooner had the squadron got out, than night would have been upon us, and with it the risk of torpedo attacks. It had been decided to wait two or three days until high water came at daylight; then in God's name we should make an early start.

"Oh, is that it?" I could not help saying; "but why had all this to be 'piped at the main hatchway?' What capital chances we should have had if we had gone out suddenly."

The captain tried to be jocular: "It is easy to be wise after the event," he said; but somehow it did not sound very convincing.

In my diary I wrote: "We are waiting for the Japanese to inform us that they are aware of our intentions; why, we are simply provoking them. At 9 p.m. on 21st June we get a circular to the effect that ships are to be ready to sail at 2.30 a.m. on the 22nd; towards midnight, the signal—'Sailing postponed.'

"At 2 a.m. on the 22nd Japanese destroyers appeared in the roads; we could congratulate ourselves: they had been waiting for us. Everything that could, fired at them. Now we could recommence our mine-sweeping.

"Towards 2 p.m. Liao-ti-shan reported a squadron of cruisers and destroyers in sight. Very disagreeable. The buoyed channel to seaward was swept for mines—it was clear. Curious!

"The *Vsadnik, Gaidamak,* and eight destroyers were sent out for the night to guard the roads; why wasn't a cruiser sent out as guard-ship? Why? Towards 10 p.m. we heard guns outside. The Japanese had again appeared, but our destroyers had attacked and driven them away. Our losses and damages were insignificant, only the *Boyevoi* had a biggish hole. We are definitely to go out to-morrow. 'God grant a happy issue!' as Makaroff used to say."

At 4 a.m. on 23rd June we started moving out; it was just beginning to get light; orders were given for all ships to anchor outside until the whole squadron was out and the mine-sweeping flotilla ready to precede us. The order for anchoring prescribed the following:—We were to pass the sunken ships, the booms and mines, then turn sharp to port (east) and anchor in order of fleet numbers in two columns close outside our line of mine defences. The Japanese mine-layers had hitherto not risked coming as near as that to the water batteries—at least no Japanese mines had been found there up to date. The *Diana* was lying in the entrance; she was the first to go out, the *Novik* at the same time. Then followed the battleships and cruisers just as they lay nearest the entrance.

When we had reached our billet (the furthest east) we dropped an anchor. The assembling of the squadron was bound to take two or three hours. We therefore sent our men to breakfast, and gave them free time to rest and gather strength for the heavy day before them. Far away, bearing S.S.E., hostile torpedo craft hove in sight from time to time. We—that is, the officers—were on the point of going down to the mess when we heard a shout from the bridge—"Mine astern!" In fact, less than 100 sachen [about 200 yards] astern of the *Diana* a Japanese mine could be seen just under the surface, distinguished by the chain slings on the lid. A section of the small-arm men were ordered up to destroy it.[1]

"Just as well we did not keep a little more to port in taking up our billet," said the captain, and stroked his beard as was his custom. "That might have been a nice business."

"Yes; and lucky, too, that the mine came to the surface," I replied in the same tone. "Swinging whilst weighing we might easily have struck it."

The *Tsesarevitch* was just coming out of harbour; she suddenly turned short and stopped. "Mine just floated up under the flagship's bow!" shouted a signalman.

The *Peresviet* had already anchored. We suddenly heard rifle-fire from her direction. She, like ourselves, was evidently firing at mines.

The ships came out one by one with the greatest caution. Each one tried to follow exactly in the wake of ships which had already come out. Every one anchored as soon as possible. Whoever chanced to get a few yards too much to the right or the left might hit a mine. There were sure to be some which had not come up, but still floated at the right depth. Naturally, there was no question of adhering to the plan of anchorage.

Towards 9 a.m. we had counted five mines awash.

"How lucky for us that the Japanese had moored them so badly," the captain said laughingly. "They are all coming up."

"Five have come up, but how many more are there?" said the torpedo lieutenant.

The flagship signalled: "Hoist out steam-boats and search the water between ships."

---

[1] A rifle bullet or small shell only produces a little shock; consequently the mine does not explode, but a hole is made in its shell. Through this hole water pours in and the mine sinks, that is, lies on the bottom, where it is harmless.

The mine-searching flotilla came out and swept the water further seaward (that is, from the squadron). They found nothing; but amongst the ships a rich haul was made. By noon ten or eleven mines had either been exploded on being hooked or floated up and destroyed by gun-fire. One exploded thus quite close to our stern; it was 20 to 30 yards off. When the water which had been thrown up by it came down again, all who were standing on our poop got a cold shower bath.

On each side of us the water was free. The squadron had anchored exactly on top of the mine-field.

"How is it possible for us to have run along all those mines and never to have touched one?" was the general question.

The men said, "God has helped us"; many took off their caps and crossed themselves.

To-day nothing was heard in the mess in the way of a joke at the Japanese failure. Every one was silent: some looked as if they had something on their minds which they dared not speak of aloud. I believe that we were all depressed by the same thought. These mines must have been laid yesterday or last night, for everything hereabouts was clear of mines until then. It was quite possible our people had not kept a sharp lookout, and had never noticed anything, but why were the mines placed just here? Why precisely at the place where the squadron was to anchor? Did the Japanese by any chance know our most secret "plan of anchorage"? Surely this could not be—yet the fact remained.

"A very stupid business," said my neighbour, the gunnery lieutenant, quite suddenly; nothing more.

All were silent; no one asked why it was such a stupid business.

Noon.—The mine-searching flotilla is still steaming backwards and forwards, sweeping the channel seaward. Far away on the horizon we can make out some Japanese destroyers. Time passes quickly.

The officers had already begun to make sarcastic remarks about our exit: "No doubt we are only waiting for the next high water to go in again. We are certainly not going to sea just before dark."

Officers as well as men in our ship had hardly got any sleep the previous night, and since 3 a.m. every one had been on his legs. Yet no one used this pause to get some rest. Every one was moving about furious and impatient. "Of course we are going back again—we are to be locked up again for a month"; that was the kind of talk one heard amongst the various groups about the deck.

Suddenly, at one o'clock, the flagship began reorganising the squadron by flags. This acted like a warm sunbeam. Every one cheered up and plucked up courage. The younger officers became so enthusiastic that they called for champagne. One of the youngest members held up his glass and began to recite a passage from *Borodino* [by the poet Lermontoff]:

"What are we to do? Go into winter quarters? Are our leaders afraid of tearing the enemy's coats with our bayonets?"

At 1.40 p.m. a *Te Deum* commenced, but I was unable to attend, as at 1.50 our signal went up to weigh. *Diana* was the first ship to do this. We were to get to sea and avoid as far as possible the Japanese mines. Therefore the following procedure was ordered. The mine-sweeping flotilla was to lead out, steaming by subdivisions. Then followed three subdivisions of the second destroyer flotilla, also towing sweeps; then in single line ahead *Diana, Askold,* all the battleships, *Bayan* and *Pallada.* The *Novik* and first destroyer flotilla, which were attached to the squadron, received orders to proceed out independently. We moved ahead very slowly, that is, at 6 knots. At higher speeds the sweeps floated up.

We were all in excellent spirits. At last we had resolved upon something. If we are now to go down, it will at least not have been in vain. It is merely a question of getting at the enemy and sticking to him.

"*We* shall burst up in any case," the torpedo lieutenant observed in an argumentative tone. When we all went for him, he continued: "*Diana* leads the line; she will therefore be the first in action; we shall also hit the first mine which has escaped the sweeps. But if we *don't* hit a mine, then the *Diana* will burst from mere pride at the great honour of leading the squadron."

The torpedo lieutenant was evidently rather pleased with his *bon mot,* at which we all laughed heartily.

At 2.35 the Japanese destroyers were cheeky enough to fire at our mine-sweepers. The *Novik* and her destroyers were sent after them. The *Diana* also opened fire on them with her 6-inch guns over the heads of our own vessels. Firing went on for about a quarter of an hour. When the Japanese realised the uselessness of their performance they steamed away at full speed to the south-east.

Our chaplain, Hieronomach [monk and priest] Gavril [Gabriel], had continued the *Te Deum* in spite of our clearing for action. He walked along the decks with the Cross and Holy Water, and reached the upper deck when the engagement was in full swing. He paced along slowly and solemnly in his green and gold-embroidered cassock. It made a strange, indelible impression in the midst of an engagement, when the sound of the guns mingled with the voices of the choir singing the anthem: "O Lord, save thy servants." The guns were dealing out death and destruction, and amongst them went the priest who was blessing them. All heads were bared to receive the blessing of the Lord—perhaps for the last time. Only one moment each gun-layer moved aside from his sights, to kiss the Cross with which the priest had blessed him.

"A brave man, our father," the captain said *sotto voce.*

We changed our course to starboard and to port so as to follow the windings of the channel which our mine-sweepers were clearing through the mines (they buoyed the channel as they went along.) We generally proceeded in a south-easterly direction.

At 3 p.m. we sighted a new enemy in place of the Japanese destroyers which had fled. At first the "Greyhounds" appeared, then one of the older cruisers (apparently *Matsushima*), and finally two armoured cruisers. They made no attempt to disturb our solemn procession, and thus provoked a good deal of witticism on the part of our jesters. They said the enemy had better attack us while we were "burying the cat," instead of idling about.

By 4.30 p.m. we assumed that we were in clear water. The squadron stopped, the mine-sweepers hauled in their lines (a wearisome business) and started back to Port Arthur, convoyed by the second destroyer flotilla. For the present the squadron remained stopped so as to cover their retreat. At five o'clock we began taking up battle formation. This was single line ahead. The battleships, led by the flagship, came first, then followed the cruisers led by the *Askold*.

We shaped course S. 20° E.—in other words, for Shantung.

At 6.40 the Japanese main body hove in sight on the port bow. Its course lay across ours. The Japanese were nearly complete. They had four battleships, with which the *Kasuga* and *Nishin* evidently formed one division, and four armoured cruisers. Besides this we made out the *Chin Yuen* leading three of the older cruisers, the "Greyhounds," a second squadron of protected cruisers, and the destroyers. In the divisions of the latter, which were nearest to us, we counted eighteen boats. But behind them were yet a considerable number of columns of smoke.

"They are all there; even the old *Chin Yuen* had to turn out," the officers were remarking to each other. "This is the result of the way in which we keep our secrets. During the last four days the Japanese have even been able to recall the ships off Vladivostok. Now the fun will begin."

However, I repeat we were in excellent spirits. We were looking forward to the battle bravely and cheerfully.

"There will be no turning-in to-night, old chap," the sailors joked. "To-night it will be a case of a shake-down at the gun. Mind you save up something from your supper." Laughingly they tucked away some sugar in their blue frocks and distributed the tea-kettles and tea at the guns.

"To-night soda-water and sandwiches are to be ready for the officers of the different quarters," was the mess president's order.

At 7 p.m. we went to "Action" stations.

The hostile fleet was getting nearer.

Suddenly our flagship turned to port with full helm, nearly 16 points. The other ships followed in her wake. The Japanese did not follow us, but continued their course. (Perhaps they did not believe that we really meant to go back, and suspected some *ruse de guerre* in our movements.)

At 7.50 we lost sight of the Japanese Fleet in the dusk. Its last course had been about west.

We also at first did not believe in the intentions of our leader. But the longer we stood on, the clearer it became. The squadron was returning to Port Arthur—it was flying, although it had merely sighted the enemy. What was up? What had happened? Every one asked himself these questions, full of annoyance and astonishment.

We had no time for much guessing, for we had to act. The hostile fleet had disappeared to the westward, but his destroyers were deploying on the horizon, out of range of our guns; we had already counted thirty. They were evidently trying to draw ahead of us on both sides—obviously with the view of attacking us.

When the squadron turned, it was 23 miles from Port Arthur. It grew dark very fast: the larger part of the destroyers worked round us to the eastward, that is, our starboard side, the smaller portion on our port side. Our cruisers (*Askold, Bayan, Pallada* and *Diana*) increased speed and took station on the starboard bow of the battleships; the *Novik* and destroyers were similarly placed to port. I do not know whether we received the orders for this by flag signal, semaphore, or any other means (I did not note this). What we had to do was clear. We were to draw the torpedo attack on us and thus to cover the battleships. The weather was favourable: the night clear and calm, with the moon in its first quarter. It was not very light, but one could see well.

The attack began as soon as the after-glow had died away in the western sky. It is difficult to analyse and write down one's feelings during a torpedo attack, especially when it is one's first experience of the kind. By and by one gets accustomed to anything. My diary only says:—"For half an hour we fired like mad. Brave fellows these Japanese. They all attacked with great pluck and dash; they probably got some hits. They are gone, and we are unhurt. 9.35 p.m.—We have just anchored."

During this night's run the hostile destroyers were not the principal danger; we could head off these boats; but this time we returned without having our mine-sweepers in front, and not even by the same channel by which we had gone out by day: we might strike a mine any moment.

Gold helped us this time as well. Only the *Sebastopol* fouled and exploded a mine; happily, she was able to stop the leak and continue with her consorts.

We all anchored in the roads at Port Arthur without signal, without any orders whatever, as if by inspiration, but we somehow did it well.

The ships of the squadron were anchored in two lines. These formed a semi-circle, one end of which was near the shore between Golden and Cross Hills, the other below White Wolf Hill.

As soon as we had anchored we got out the torpedo-nets and went to "man-and-arm ship" stations. The attacks commenced soon after.

Curiously enough, the Japanese never once attempted an attack *en masse*; each time they only sent a group of four or five boats: the same mistake as on 8th February.

Meanwhile, the powerful searchlights of the fortress formed a wall of light across the ends of our line, which nothing could pass without being seen. Every group of hostile destroyers which tried to do this came under the concentrated fire of the entire squadron; even at great distances (5 to 6 miles). The theory which prescribes the use of only the secondary and light armament against torpedo attack was completely upset. The big turret guns of the battleships fired away their expensive segment shell just as the 6-inch. How heavy this fire was, and what went on in the zone through which the Japanese destroyers had to pass, not even those who were on board could, I take it, describe. Eye-witnesses who observed this spectacle from the shore in perfect security, could not find words which were strong enough to describe what they saw.

A captain of the garrison artillery, whom I met two or three days later, was still quite excited: "It is impossible to describe it," he said; "the squadron was brightly lit up by the flashes of its own guns, but around the destroyers the bursting shell were brighter than our searchlights."

Even Japanese nerves could not stand that. In this hell seconds seemed minutes. One lost all measure of time and space. According to the fortress rangefinders, not a single destroyer got nearer than 3 miles from the squadron (that is, of course, too great a distance at which to fire a torpedo). But doubtless they were firmly convinced that they had got quite close up, and had fired their torpedoes at the usual distance of a few cables.

The attacks became especially fierce when the moon had set at about 2.10 a.m. In my diary I find: "2.30.—A hellish fire. 3.10.—The attack beaten off, the enemy gone."

The last attack took place at about 3.30 a.m.; after that the dawn put an end to the terrors of the night.

What were the Japanese losses? We don't know: they always know how to keep their secrets.[1]

Another interesting note (from my diary). "When we were firing with the guns of one side only during these torpedo attacks, the guns' crews at the disengaged side lay round their guns and snored." Were they so dead-tired, or had they in truth got accustomed to everything?

---

[1] Next morning we found five or six "Schwartzkopf" torpedoes in the roads. How many had sunk or drifted away with the tide?

During the engagement we never had time to reflect upon what we were doing. We had to exert our bodily and mental powers to their fullest capacity. When day dawned and the enemy disappeared we had leisure to think over our situation.

Many of us still had a faint hope that our retreat did not mean the end of our operations. It was thought that we had only placed ourselves under the protection of the shore searchlights for the night.

"That was all for the best," said our optimists. "Thanks to these powerful beams we were able to beat off the attack. The Japanese must assuredly have suffered losses in their flotillas, besides which they have burnt their coal and fired away their torpedoes. The boats will first of all have to replenish their store of both. Consequently, we may count upon one or two peaceful nights at sea."

"Quite so, if only it really were our plan," replied the sceptics. "But suppose we have simply bolted."

However, no one would concede this. In fact, those who had hinted at this were overwhelmed with reproaches. We were so anxious to believe that the "Great Edict" stood condemned, and that we were really bent on fighting it out.

On 24th June (next day), at 5 a.m., the flagship made the general signal—"Proceed into port." This shattered our last illusions.

The shadow of death seemed to lie on our ship. Only a few minutes before the officers had looked almost cheerful, notwithstanding thirty hours without rest or peace, and had kept the men in good spirits with jokes and kindly words. Now, at one blow, all life seemed to have gone out of them; their faces all became dark and dejected.

The *Pallada* relieved the *Diana* as guard-ship; she went straight to the latter's buoys and we secured to buoys in the West Basin. We made a good evolution of it, but every one worked automatically and from sheer force of habit, without the slightest "go," and that desire to outdo the other ships in smartness.

We went in to remain there. Was it not a matter of perfect indifference how it was done?

By 11 a.m. the whole movement was finished. Little was eaten at breakfast, and of talk there was still less. After breakfast every one at once went to his cabin.

"And now for a little sleep," I thought, as I threw myself on my bed.

But no sleep came. Perhaps I was overtired—perhaps there was some other cause.

My thoughts began to wander. Single words passed through my half-dreaming memory:—"We have fled—fled without fighting. Yesterday morning God helped us—last night we remained unharmed by the Grace of God—and what have we done ourselves?"

I believe that the fate of the Port Arthur Squadron was finally sealed on that day.

On shore the Japanese continued their attacks against the fortress.

On 26th June they were already as far as Lunwantung. They were supported by a destroyer flotilla, which fired into the flank of our positions from seaward. We sent out the *Novik, Otvajny, Bobr*, and the destroyers to drive the former away, and in return to bring the enemy's flank under fire.

The Japanese destroyers retired at first, but in a short time three small cruisers appeared in support. Against these we on our side sent out the *Pallada* and *Diana*. The enemy at once retired without fighting.

In the evening we re-entered the harbour.

During the night there was a brisk fire against Japanese boats. They were there evidently to drop mines. This was how they intended to prevent our ships from going out to the support of the Russian troops.

On 27th June we had a repetition of the previous day's doings.

At daylight the *Gilyak, Otvajny, Gremyashtchy*, and the destroyers went out and bombarded the enemy's entrenched positions on the heights east of Lunwantung; the *Diana* went as well in support, in case the Japanese cruisers should appear. We received orders to anchor in the roads, and to stand by to weigh at any moment in support of the destroyers. We counted fifteen wooden frames floating about. They were of the kind the Japanese used for dropping their mines overboard.

This was the result of their midnight visit. The mine-sweeping flotilla did not go out to-day. We had to clear a channel ourselves with the ships' steam-boats. We succeeded in fishing out two mines.

From early morning that day we had the outlines of hostile ships in sight on the horizon. At nine o'clock we were able to make out the *Akashi, Suma, Akitsushio*, and a flotilla of ten destroyers. Soon after eleven heavy rain set in; it was no longer possible to see further than a mile or two. We got out our torpedo-nets and stood by to repulse a torpedo attack as at night or in a fog. At 3 p.m. we received orders not to come in, but to remain out the night. Our berth was to be where Makaroff had placed the cruisers on guard behind the sunken vessels. So they had at last made up their minds to this. For two months and a half this berth, which was right in the entrance and protected the roads at least against any too bold attacks, had been kept empty.

In the evening the rain ceased, but the sky remained overcast, and after sundown it became pitch dark. The Japanese had, of course, noticed that the cruisers had not gone in, and at once tried their luck.

At 9 p.m. two Japanese destroyers crept along the shore from Liao-ti-shan. They had hoisted some of the very characteristic square sails of the Chinese junks on their masts, and had thus very successfully eluded the watchfulness of our shore searchlights. The Japanese safely got up to us, but when we turned our searchlights on them[1] we discovered their disguise. When the *Diana* opened fire on them they lowered away their sails and rushed to the attack. It was a wonderful moment when these boats, brightly lit up by our searchlights, put their helms over to fire their torpedoes. One of them came up to less than 15 cables [1½ miles]; I saw quite plainly when two of our 6-inch shell hit her: the one abaft the funnels, the other at the water-line under the bridge. This latter must have caused serious damage. We could see with our naked eyes how her bow went down and her speed dropped.

A signalman near me could not suppress his delight. "Splendid! Off he goes with his tail between his legs!"

Some on board us maintained that when the other destroyer turned off to fire, one of her torpedoes had been exploded by our shell. The boat they said had foundered. The same thing was said to have been seen from Golden Hill.

In the middle of this engagement one of the only two 6-inch guns we were able to use against the enemy ceased firing. What was up? One really hardly likes to write it down. During the loading the string with which the bag of smokeless powder flakes in the cartridge case was tied up, came undone. The flakes had fallen out of the bag and had piled up behind the base of the projectile. In consequence the cartridge case would not go home, and the breech could not be closed. The attempts to clear the powder chamber from the rear with the hand, a stick, or a hook, had failed. The gun had to be unloaded—that is, the projectile which had got jambed in the grooves of the rifling had to be pushed out from the muzzle with the cleaning rod.

"What splendid quick-firers," I said unconsciously. I really did not want to hurt the feelings of the gunnery lieutenant, who was perfectly innocent in this.

He shrugged his shoulders. "The system according to which our cartridges are loaded, their hermetically closing lid, which is only removed immediately before the cartridge is placed in the gun—all this is not my invention. Our 'Technical Committee' has elaborated and then approved all this. Am I expected to open each cartridge case and examine it before loading, when in action? In future we shall, of course, have to do this, but it will be done at the expense of rapid shooting."

The following was now to be the routine of the cruiser guard-ships:—Three times twenty-four hours in the roads, three times twenty-four hours in the entrance, three times twenty-four hours' rest in the basin. Of course the word "rest" was an elastic term. All we could claim was to have a little more rest than the others. When the cruiser division had to undertake any job the cruiser whose turn it was to "rest" sailed with the remainder.

---

[1] With her own search-lights a ship can only make out a torpedo boat or destroyer at 1½ or 2 miles, according to the state of the weather.

The weather got bad. Rain and fogs were frequent. We had south-east winds. They were not very strong, but always raised a heavy swell, which interfered a great deal with the work of our mine-sweeping flotilla.

The Japanese did not come in sight for several days. But on 3rd July they attacked the *Pallada.* It was the last night of her guard (she had relieved us on 30th June). Again, on 4th July, they attacked the *Bayan,* which had relieved the *Pallada,* but in both cases unsuccessfully.

On the morning of 3rd July the destroyer *Lieutenant Burakoff* returned in safety. She had been sent to Inkau with despatches. Doubtless she had brought back orders from the Commander-in-Chief, as she had been absent four days. With her speed she could have gone there and back in one night.

I should not like to omit an incident which is connected with this episode. Perhaps it is of no importance, yet it appears to me to be quite characteristic.

The destroyer *Lieutenant Burakoff* had now run the blockade a second time, and thus enabled the besieged fortress to get into direct communication a second time with the Commander-in-Chief of our army.

In the Statutes of the Order of St. George it is quite clearly stated that whoever breaks through the enemy's lines and brings the Commander-in-Chief important news will be rewarded with the Order. Was the news which the *Lieutenant Burakoff* brought not important? Was he playing at postman for some private correspondence between two friends, which possessed no value whatever? Twice she fulfilled the conditions laid down by the Statutes of the Order of St. George. None the less her captain only received the Order of St. Vladimir at the hands of Admiral Vityeft, who, moreover, pointed out how high this reward was, which the officer should try to earn by further exertions. From the local official *Gazette* we, however, knew full well what a shower of rewards for war services descended even on persons whose participation in any operations against the enemy was more than doubtful.

On 3rd, 4th, and 5th July, the *Novik,* gun-boats, and destroyers, headed by the mine-sweeping flotilla, went out daily and bombarded the coast between Lunwantung and Sikou Bay. All the cruisers were kept under steam at a moment's notice, in case Japanese cruisers showed any intention of interfering with our vessels. Our services were not required once. The hostile fleet, for some reason or other, did not consider it necessary to make even an attempt at chasing away our few ships. Meanwhile, these same ships caused the enemy's army heavy losses and contributed largely toward forcing them to retire, if only for a short time.

When the *Novik,* gun-boats, and destroyers returned on the evening of 5th July, they were received by the coast batteries with bands and cheers.

Three days of rainy weather now made all active operations impossible. Then we once more bestirred ourselves. On 8th July a new attack by the gun-boats and destroyers against the Japanese left flank took place. The *Askold* was guard-ship outside, but the *Diana* was also sent out to meet any eventuality.

On the horizon, about 10 miles off, we could dimly see the outlines of three ships, apparently the *Matsushima, Itsukushima,* and *Hashidate.* They attempted nothing against our boats. But towards 3 p.m. a division of Japanese destroyers approached. They retired after a short artillery duel, when the gun-boats began to fire on them. Meanwhile, the steamer *Bogatyr* laid out mines in Taché Bay. The *Bogatyr* had been converted into a mine-layer. The *Amur* was still in dock repairing her under-water damage.

We of the *Diana* viewed these doings of the *Bogatyr* with some suspicion. "If Taché Bay is being blocked up with mines, it means that the retreat from Lunwantung heights is being prepared, also the retreat from Green Hill and the Wolf Hills. Bad business. The investment of the fortress is complete." This was whispered about amongst the officers.

On 9th July a "big operation" was begun. The *Novik,* the destroyers, all first-class cruisers, and even the *Poltava* went out. At 9.30 this solemn procession, headed by the mine-sweeping flotilla, set off towards Lunwantung. Some large ships were in sight on the horizon, but so far off that we could hardly make them out. Several divisions of hostile destroyers were somewhat nearer. These latter once attempted to attack the mine-sweeping flotilla, but when the cruisers opened fire on them, they retreated hastily, and disappeared. When we had reached our destination, the *Poltava* anchored in the eastern portion of Taché Bay. The cruisers went on as far as Lunwantung, but no further, for here both the Japanese and we had been laying out mines at night with equal energy. The destroyers went ahead nearly up to Sikou. Towards 2 p.m. we began to shell the flank of the Japanese position. Our fire was improved by Morse signals from the shore, which told us where our shell were pitching.

The enemy became restless. His ships, which had been in sight a long time, now approached us up to 55 cables (11,000 yards) and opened fire on us at that long range. They were the *Matsushima, Itsukushima, Hashidate,* a division of gun-boats, and some destroyers.

They did not dare come any nearer. It afterwards turned out that the *Bayan* had, by a lucky shot, hit one of the Japanese cruisers in the stern with one of her 8-inch guns. We must, I feel sure, have scored other hits as well. At least the Japanese retreated very rapidly to a distance of 7 to 8 miles. The *Bogatyr* again dropped mines in Taché Bay.

We could not help suspecting that the entire "big operation" was only intended to cover this latter enterprise.

That was a bad sign. But there were others which were worse. The arsenal of the fortress commenced serving out small arms for the entire ships' companies,[1] and every soul on board, including even stokers and the "daymen," were drilled as small-arm men and put through a course of musketry at the butts. Up to now the landing parties were ordered to be only of such strength that, without them, the ship could still develop her full engine power and man the guns of one side. Consequently we had kept the whole of the engine-room *personnel*, the specialists of all branches, and half the seamen on board. The Port Arthur Squadron was evidently to prepare for a long and close siege together with the garrison of the fortress. The following rules were now established:—On the signal being made to land small-arm companies, the whole crew, except the above-mentioned specialists, and half the officers were sent. The further signal to land the "Reserve Companies" meant all the remainder. We were only to retain on board the senior specialists amongst the officers and petty officers. In our case these amounted to forty all told, and these were so far as possible to work the guns in case of need. At critical moments they were to destroy the ship to prevent her from falling into the hands of the victorious enemy—a sad prospect.

---

[1] According to rule, only the seamen and a few petty officers of the crew were armed with small arms. The specialists, that is, gun-layers, electricians, torpedomen, signalmen, and helmsmen, were only armed with revolvers. The engine-room *personnel* possessed no arms at all.

(*To be continued.*)

THE WAR IN THE PENINSULA, 1808-14.

VALUABLE NOTES FROM RECENTLY DISCOVERED DIARIES OF THE WAR, NOW BEING PUBLISHED IN "EL IMPARCIAL," OF MADRID.

Précis by Major-General J. C. DALTON, R.A.

Continued from September JOURNAL, p. 1208, and concluded.

VI.

SEVILLE DURING THE BATTLE—AN ANONYMOUS PATRIOT—THE SACRIFICES OF SACKED CORDOVA—POPULAR ANXIETY—LETTER FROM A FIELD OFFICER—GIRON UNDERTAKES THE OFFICIAL PART—MODESTY OF CASTAÑOS.

It is not proposed to weary readers of these articles with a fresh description of the battle of Bailen, which is already well known in detail,[1] nor is there in the manuscripts under review, practically, anything referring to the actual battle. Giron had not the luck to take part in it, and the truthful narrator respects "the interiority (sic) of a feat of arms which can only be worthily depicted by the pen of the man who thereat wielded the sword."

It will be interesting now to revert to the President of the Junta, Saavedra, who was anxiously awaiting in Seville for news of the battle. The usual crop of unreliable rumours was coming in, which only served to excite and exasperate the popular mind.

A patriot, whose name and abode are not given, wrote to the President on 16th June, 1808, an account of his journey from Madrid with Vedel, "because his loyalty to his country forbids him to be silent regarding certain interesting information," then refers to the numbers of the enemy, to supposed dissensions between Vedel and Dupont, as well as to the circumspect nature of the former; *e.g.*, "if he (Vedel) should be threatened in his rear he will not advance, and as he will thus delay more and more the junction (with Dupont), it will be possible to beat the French columns separately." This news, notwithstanding its vagueness, was sent post haste to Castaños.

---

[1] There are excellent official maps published in Spain to illustrate this battle, with positions of the troops at various periods. Oman, in his "Peninsular War," has also got good maps showing the progress of the fighting.—J.C.D.

On the 17th July, news, mostly untrue, began to filter in from the villages in the theatre of operations, and kept the people agog. Saavedra, writing at this time, says: "He who is an observer of the human species will note in this general uneasiness that kind of agitation which involuntarily gives rise in people's minds to an expectation of decisive events."

The population could not get themselves to think of any business; the war absorbed them, and it was the universal topic of conversation. On the morning of the 18th, news arrived that Castaños had taken the fortified position of Los Visos, but not the high road where the enemy was established in force; it described the intolerable heat and thirst which had accounted for many lives, soldiers having thrown themselves in despair into the river which the French were defending with the utmost vigour.

In the evening news came of Reding's great success at Menjibar; the battle had been "obstinate and glorious." The enemy, whose best troops were there, had lost General Gobert, guns and colours. "Amongst other feats of gallantry Reding's and Ordene's regiments, and the Spanish and Walloon Guards, had formed a famous square, which repulsed repeated attacks by 800 French Cuirassiers, supported by clouds of skirmishers and by a regiment of *Chasseurs à cheval*, in all 1,400 horsemen, who were all but annihilated."

"This news, spread by the people, caused extraordinary excitement, and everyone was now sure of victory; but those who knew the real state of affairs, though they heard of these fine beginnings, were cautious as regarded their expectations of ultimate success. Vigilance was redoubled in all exposed parts, but the public rejoicing degenerated into disorder. All day and part of the night the streets were thronged with people cheering and singing, but it was from pure joy. Patriotic songs multiplied, and were the favourite airs of the day. The names of the members of the Junta, of Castaños, Reding and Ferdinand VII. resounded on all sides."

Letters kept arriving which repeated the advantages gained by the Spaniards with natural exaggeration. The letter which made most impression on the Junta was one from the Governor of Cordova, Field-Marshal D. Antonio Gregorio, stating that when the Commissary of the Army made known the need of funds, all unanimously responded, and notwithstanding the ruin and pillage which they had endured, they made up a sum of a million reals (£10,000) for—as they put it—"the relief of the heroes who were going to save their country."

That evening, the 18th, the President had a letter from Castaños saying that the plan of campaign made at Utrera was about to be realised, that Dupont was surrounded, and that Vedel, who had arrived at Bailen the day before, had been forced to retire, being threatened in rear by Mourgeon and Valdecañas. He added that Dupont might attempt to escape by the Sierra, that he had just intercepted a letter from that General to Beliard relating the straits in which he found himself, but that he was resolved to defend the bridge of Andujar "to the last."

"Under these circumstances," said Castaños, "I expect to-morrow to make a decisive attack in conjunction with Reding and the other troops of the vanguard, trusting in the help of the God of Armies and the intercession of the protecting saints of the Spanish Army, Santiago and San Fernando."

The 20th July was an anxious one for the Junta and for the people. "At half-past five in the afternoon," writes Castaños, "a *Parlementaire* arrived asking for suspension of hostilities to enable General Dupont to confer with General Reding. I have refused it. A few minutes since I received a letter from General Pena stating that the French wanted to surrender; I would concede nothing less than that they should be prisoners of war, promising the General and his officers to retain their swords and one portmanteau of clothes, bearing in mind the pillage they had carried out in our cities, assuring them, however, that they would be treated with the consideration which the French squadron received in Cadiz in accordance with Spanish generosity. Whilst I am preparing details, Your Highness will know that we have taken guns, made prisoners, and in a word that General Dupont is surrounded. Army Headquarters, Andujar, 19th July, 6 p.m."

The messenger was sent off to rest, and told to keep the news private.

The President summoned the Junta, and though it was recognised that the surrender of the French was not as yet a *fait accompli,* it was decided to print and circulate the General's letter. By 6 a.m. on the 21st all knew the contents. "Though there were no salutes, the joy was so boisterous and expressive that no one could doubt that a great triumph was already assured."

To avoid misapprehension and undeceive the people, who imagined that the French were in the inferiority as regards numbers, the President made known the contents of Dupont's letter to Beliard, which he had kept to himself up to that time, proving that as the French had 24,000 men, including 3,500 cavalry, the army had fought with equal numbers, though the French had the superiority in cavalry, and twenty years of war behind them.

The people meanwhile awaited details of the capitulation with intense eagerness.

At 10 p.m. a cavalry soldier who had been present at the battle arrived bringing letters from some officers, more particularly one written by a field officer, and which the recipient hastened to communicate to the Junta.

This related that "Reding, having again joined hands with the vanguard under Venegas and the division of Coupigné had left Bailen at 2 a.m. in order to arrive at the point of atack at the hour agreed on. When it was barely possible to distinguish objects they ran straight into the advanced troops of Dupont. Our troops knew the ground well; they recognised that they were advantageously placed, halted, deployed for action, placed their batteries quickly in position and took up firm ground. Dupont attacked in three columns, but was vigorously repulsed; he repeated five attacks of the same kind, but with no better luck. At last he himself with his generals led a last and desperate attempt in four columns. Our troops remained immovable, reserving their fire, and awaited the attack in silence and serenity almost at pistol shot. Then our artillery and battalions opened on the enemy a *feu d'enfer* which dismounted their guns, covered the field with dead, and forced the French to beat a hasty retreat. It was 10 a.m., and we began to hear distant firing. This was the division of General Pena which was arriving and was falling on the enemy's rear. The confusion and disorder of the French cannot be described. Dupont, defeated in front, attacked in rear, unable either to advance, retire, or escape, without food and almost without water, asked for a suspension of hostilities, and capitulated—forced to submit to such conditions as might be imposed on him."

The Members of the Junta were now set at ease in their minds, and "retired to rest under the laurels which their General and his army had secured."

The laborious capitulation having been arranged and terminated, Giron, commissioned by Castaños and Tilly, to carry the news to Seville, started on the 21st July.

"I left Andujar post haste at 11.30 a.m. I entered Seville at 4.30 p.m. on the 22nd. What happiness amongst the inhabitants! What craziness of joy! I was given the rank of Brigadier with letters of service; I renounced the £240 to which I was entitled by the latter. They wanted in the first moments of their joy to make me a Field-Marshal. I thought it my duty to decline that."

The General, says Saavedra, after explaining everything in his despatch in the most modest manner, attributing his success to the assistance and dispositions of the Junta, begged that a solemn festival of thanksgiving to Saint Ferdinand might be arranged in accordance with his promise before going into action.

The Junta ordered three nights of illuminations. On the morning of the 23rd the Members repaired, preceded by a guard of honour and accompanied by all the Corps in Seville, to a solemn Te Deum, which was chanted in procession through the naves of the Cathedral, concluding with prayers in the Chapel Royal, where the body of the sanctified monarch was exhibited.

This was a fitting culmination of the happy intoxication wherein the joy of the shipwrecked on touching *terra firmâ* is mingled with pride at an almost incredible triumph!

To the courageous generation which traced with its blood in the history of the world the glowing name of BAILEN may with justice be ascribed the honour and prestige which have been the safeguard of Spain against serious invasion for well nigh a century.

VII.

After the Battle—Offensive Insinuations—The Surrender—Plans and Delays—The Action by the Junta—Final Summary.

The details of the capitulation of Dupont's Army are public property. It would be hard to find a precedent for a surrender such as this, an entire division (Vedel's) giving up its arms without any fight. There is nothing essential that is not known of the affair. The negotiators of the terms added greatly to the advantages obtained by the victors, though certain ignorant and untruthful historians have not hesitated to attribute the fruits of clever diplomacy to sinister threats of cruelty. In an interpellation addressed by Brigadier Macdonal (sic) to Brigadier Giron, there occurs this question :—

"By what means did Castaños produce such fear, that Vedel, being still very far away, had to surrender?"

To this insinuated suspicion of cruel and intimidating threats Giron replied with dignity :—

"General Castaños did nothing to produce fear. The rout suffered by Dupont, and the desperate situation in which he found himself after the battle, was bound by itself to produce fear, and did produce it, and the desire to ameliorate the conditions of the capitulation for his troops caused him, without doubt, to include the troops of General Vedel with his own, in which matter General Castaños negotiated with great cleverness. The situation of Vedel was, moreover, very critical. Being 50 leagues removed from any hope of succour, in the midst of a hostile and determined people, and with a victorious enemy in superior numbers in front of him, capable of pursuing and overtaking him without difficulty, he could not flatter himself into the smallest hopes. General Castaños understood how to profit by all these circumstances, and by the passions of those with whom he was treating, and he completed by good diplomacy in the terms of surrender what he had gained by arms on the battlefield."

A proof that the aim of the French was to extend the concessions of the capitulation to the greatest possible number of their troops is to be found in the fact "that General Marescot begged as a favour that the Commander-in-Chief should include on the same footing as the troops of Vedel, the garrison of Manzanares, which came from the centre of La Mancha, no great distance from Madrid, to lay down its arms in Andalusia, so great was the influence of the decisive victory in their minds."

On 24th July, Castaños informed the Junta that Dupont with his division, had filed past through the midst of the Spanish Army, formed up on the battlefield, handing over eagles, standards, artillery, arms, ammunition wagons, and baggage, "the grandest and most flattering spectacle which could offer itself to the eyes of Spaniards."

Giron, in his description, says:—"Eight thousand, two hundred and forty-two splendid French troops, marching with the martial step peculiar to that army and with the pride of its past triumphs, came to lay down its arms at the feet of a Spanish Army formed in 20 days."

"Our soldiers did not belie their characters under these circumstances; satisfied, but not overcome, with their triumph, they knew how to preserve the dignity of the national character and to respect in their enemy, who had already surrendered, the valour and misfortunes of the conquerors of Europe."

So complete had the victory been that it was necessary to authorise the aide-de-camp, Villoutrey, to bear to Madrid the news of what had occurred, "such an event being unknown to Europe since the celebrated victory of Bitonto."[1]

Some disorder occurred in the distribution of the spoil owing to the presence of a large number of inhabitants, some from a long distance, "who appropriated a good deal of it, a proceeding which was tolerated by the very troops who themselves had principally suffered; but great success and overflowing hearts made them generous."

The feeding of 24,000 prisoners[2] was a serious matter: some were sent to work in the fields with the inhabitants, others were put on to public works; they were registered without any force, "leaving them such property as appeared to be their own or belonging to their corps; but all works of art and valuables, especially sacred vessels, which were found in their possession, were returned to the churches or other owners to whom they belonged."

Saavedra relates how a disturbance occurred in the Port of Santa Maria, because when Dupont was embarking "the trunk belonging to one of his officers broke open and a chalice fell out of it." The popular indignation at the sight of this was only appeased by the firmness of the Governor and by the exertions of the regiment of Ecija.

On 1st August Castaños entered Seville amidst the greatest enthusiasm. "His first act was to go to the cathedral to thank the Almighty and his protector, San Fernando, and to deposit in the chapel dedicated to the latter the trophies captured from the enemy. He then visited the Junta, which acclaimed him Captain-General of the Army and one of the Junta's most worthy members."

---

[1] At the battle of Bitonto, which is near the Gulf of Bari, in Italy, the Imperialists were signally defeated by the Spanish under the Duke of Montemar, General to Don Carlos, on 27th May, 1734. Don Carlos was crowned King of Naples, the German Viceroy was expelled, and the Duke of Montemar created Duke of Bitonto. This affair led to the subjugation of Sicily, which soon followed.—J.C.D.

[2] Included in this number are those who surrendered with the French squadron in Cadiz.

And now we have to note the serious inconvenience which must inevitably result from the Constitution of the Juntas, especially as regards the course of future operations.

Castaños was obliged, in order to reap the fruits of the battle, to march rapidly on Madrid.

Some thought that there being a French army in Portugal and 24,000 prisoners in Andalusia, the former could not desert the latter, and it was considered advisable that Castaños, having effected a junction with the force in Extremadura, which amounted, it was said, to 20,000 men, together with 10,000 Portuguese, should fall on Lisbon, and, after securing the surrender of Junot, should march to the French frontier to cut off the retreat of the enemy. However, news arrived that England had taken on herself the task of driving Junot from Portugal, and it was then decided that the army should march direct on Madrid.

The Spanish force was unprovided with the indispensable means for operating at such a distance, and thereby difficulty was experienced in supplying it and getting it started.

On 15th August the General-in-Chief left for Madrid, accompanied by the representative of the Junta, D. Andres Miñano, and arrived in Madrid on the 24th.

The Central Junta having been established in Aranjuez on 24th September, the Junta of Seville then became reduced to a dependent and subordinate body.

The worthy President of the Junta of Seville thus alludes to the subject:—

"The Junta of Seville did what it could during its period of power to carry out the great object which it had at heart; but it had the defects inseparable from a numerous body especially under such difficult circumstances. Twenty-four persons of different and even of opposite characters, each of whom believes himself to be invested with supreme authority, and who sees the population submitting to his orders, are not easily reduced to that unity which is the first requisite for a well-regulated government.

"There were in the Junta strong and bitter discords; there was also the spirit of vanity, which poisons the most well-deserving bodies. This was especially noticeable after the battle of Bailen. Many individuals, who had shown great austerity in troublous times, had not sufficient strength of character to resist the seduction of prosperity. They wanted superior treatment, greater lustre, and higher honours than they were entitled to.

"Notwithstanding these minor defects, the Junta did good service. The hands of the members never touched a farthing of public money. The total amount disbursed during those memorable four months barely amounted to £210,000. With this the Junta created, maintained, and sent into action a fine army of about 30,000 men; it maintained 20,000 prisoners for two months, and religiously fulfilled all the obligations of the State.

"There were no extraordinary imposts levied, and no debt incurred beyond a loan in Gibraltar amounting to under £20,000, and punctually paid, really before it was due."

The whole course of action was dictated by sagacity and prudence, and by consideration for the Commander-in-Chief, whom they left untrammelled and free to act as he thought best.

The regular forces gained much glory in this successful campaign, and the revolution increased rather than diminished their discipline and patriotism.

The measures adopted by Castaños to keep in hand the heterogeneous team entrusted to him were wise and clever. He guided his recruits gently at first and introduced them to the seriousness of war by gradual steps; from manœuvres to engagements at long ranges, thence to the skirmishes of Los Visos and the harder fighting at Menjibar and Villanueva. This explains the admirable firmness they displayed at the supreme moment, which caused Thiers to allude to them as "walls of bronze."

The striking figure of Castaños emerged from this battle still grander and more noble; careful and prudent in his undertakings, conciliatory in council, clever and foreseeing in initiative, modest in victory, persuasive and affable in negotiations, he possessed the hand of iron in a velvet glove, and knew how to guide multitudes with a subtle and imperceptible power of command.

He was fortunate; that portion, by no means small, which in war is due to chance, was decided in his favour; but no one could deny that all which in war rests on calculation was in his case attended to with certainty and notable resolution.

But the real hero of that epoch is the population of Seville. On assuming the mantle of authority, which dropped at the time of the revolution, it hastened to place it on the shoulders of those who so completely justified their selection. The patriotism of the people was admirable.

The Sevillanos showed that when souls are exalted to a dangerous height the people are invincible, if enthusiasm, instead of overflowing into garrulousness, or ferocious revenge, will but subside into voluntary obedience, by which a vociferating mob is transformed into a conquering host.

Giron thus deals with the subject of the fruits of this decisive battle. "He who may desire to ascribe to the battle its full value, and to judge how far the victory of Bailen influenced the fate of Spain and of Europe, should for a moment imagine it to have been lost, the French victorious on the shores of the Guadalquivir, spreading all over Andalusia, breaking up the Government in Seville, and assaulting the walls of Cadiz, which city later on became the refuge of the entire nation; the usurping King meanwhile remaining tranquilly in the capital of the kingdom; his party freed from vicissitudes and risks being daily augmented by timid and lukewarm Spaniards; the prestige which preceded and invested the French eagles, fortified by a new victory actually seen, not merely reported; the first attempt of a people which dared to resist the yoke which others had submitted to in a miserable and torturing silence. . . . . . Such and still worse would have been the consequences of a disaster at that juncture had the state of affairs been as above described; imagination can, with difficulty, conceive it all; the country, now free, shudders at the bare idea of it."

"And what were the results of this victory? What carried the French, the undisturbed occupants of the capital of the Spanish Empire, beyond the Ebro? What gave the Spaniards breathing time? What enabled them to form a central government, and start the pernicious, though at that moment indispensable, federation of the Provinces? What induced the partisans of King Joseph to hesitate, and brought over to our side all those who did not fear the vengeance of the indignant people? What led to the French Army being isolated in Portugal, and to the subsequent victory of Vimiero and Convention of Cintra, which freed that kingdom and gave it the necessary time to organise its ulterior defence? What exalted the soul of the English nation and made our cause popular in that powerful State? What gave to the rest of the world the example of a great triumph gained by raw troops over the conquerors of Prussia, Austria and Russia? What made them conceive the possibilities of the future Leipsic and Waterloo, where was completed so gloriously that which was commenced at Bailen?

"If Europe some day were to erect a monument to bring to the mind of generations to come its glorious emancipation from the colossal Power which, arising out of an unheard-of revolution dominated her for a considerable time, Spaniards would read with pride on the base of this monument the memorable name of BAILEN, and history, uninfluenced by passion, would inscribe in letters of gold the pages wherein they present to future generations that portentous battle which led to those immortal victories on the fields of Saxony and Flanders, and restored to disturbed Europe its independence and repose!"

THE JAPANESE ARMY IN 1908.

(Translated by permission of the Minister of War from the *Revue Militaire des Armées Etrangères.*)

Continued from September JOURNAL, p. 1219.

CHAPTER II.

ORGANISATION OF THE JAPANESE ARMY IN TIME OF PEACE.—TROOPS AND EFFECTIVE STRENGTH.

Composition of the Army.—The organisation of the Army, both in peace and war, is based on the division, which, as the unit of the higher organisation, may be regarded as intermediate between the French division and the French Corps d'armée. The Japanese Army has no army corps.

There are 19 divisions, viz., eighteen, numbered from 1 to 18, and the Guard Division.

Previous to the war there were only 12 divisions and the Guard. Four divisions, the 13th, 14th, 15th, and 16th, were formed while the war was in progress. When peace was made these four were retained provisionally in Manchuria and Corea. In March, 1907, the 15th and 16th Divisions were withdrawn to Japan and temporarily quartered in the huge barracks previously occupied by the Russian prisoners. In October, 1907, the 14th Division was replaced in Manchuria by the 10th Division and returned to Japan. The 13th Division remained in Corea, but it is probable that it will be relieved in the course of the present year (1908) by the 2nd Division.

The cost of a division in Manchuria or Corea is about double that of a division at home in Japan. Consequently the recall of two divisions without relief enabled the Japanese Government to create two new divisions, the 17th and 18th, which raises the total number to 19.

In addition to the 19 divisions, the Japanese Army contains the following troops:—

Two independent brigades of cavalry, each of two regiments of four squadrons.

Three independent brigades of field artillery, each of two regiments of six batteries.

Three independent battalions of mountain artillery, each of three batteries. These battalions would be attached on mobilisation to the troops operating in mountainous regions.

Certain units of "heavy artillery" replacing the former units of "fortress artillery," and comprising :—

Two brigades of heavy artillery of two regiments each. These brigades man the guns of the coast and other permanent fortifications in Japan. They also furnish on mobilisation the units of heavy artillery required by the Army in the field.

Two independent regiments of heavy artillery (the 3rd and 4th). They will form the siege trains.

Twelve independent battalions of heavy artillery, six in Japan itself and six quartered outside Japan (two in Corea, two in Formosa, one each in the island of Tsu-shima and at Port Arthur).

In time of peace, regiments of heavy artillery have each three battalions of three companies; the independent battalions have a variable number of companies.

Lastly, there is a brigade of "communication troops," comprising a railway regiment of three battalions of four companies, and a telegraph battalion, consisting of four telegraph companies, a wireless telegraph company, a balloon company, and a search-light instructional section.

Troops Stationed outside Japan.

Garrison of Corea. — The garrison of Corea consists at present of the 13th Division, recently reinforced, on account of the events which took place at Séoul last summer, by the 12th Brigade (12th Division), and four squadrons of cavalry. There is also a battalion of heavy artillery, two companies at Port Lazareff, one at Masampo, garrison of Manchuria, and the Kwan-tung Peninsula.

This is at present made up of the 10th Division (headquarters at Liao-yang), a battalion of heavy artillery at Port Arthur, and six battalions of railway guards along the railway line. The latter have each 4 companies and a strength of about 754 of all ranks (total 4,524).

It appears to be the intention of the Japanese to augment the railway guards to a strength of about 9,420, distributing them at the same time into fifteen detachments, each of about 628 of all ranks. This will enable the whole of the line troops to be concentrated in the Kwan-tung Peninsula, and it will then be possible to reduce the garrison. It is probable that later on the divisions in Manchuria and Corea will be withdrawn, and that the garrisons will be furnished by independent bodies of troops, specially recruited, like the Formosa Division.[1]

---

[1] This is practically certain. Under the modern military system, permanent over-sea garrisons are furnished by special troops (sometimes by a special Army), quite apart from the National or Home Army. The conditions of service of such troops can thus be adapted to their employment, and long service can be resorted to when circumstances make this economical or convenient.

Brigade of Occupation in Péchilli.—This is a mixed force, comprising two regiments of infantry, a squadron of cavalry, a mountain battery, and a (telegraph) detachment of engineers. The troops are drawn from the Army and relieved periodically.

The garrison of Formosa consists of two mixed brigades, each of three battalions of infantry and a mountain battery. There are also two battalions of heavy artillery (Kulung and the Pescadores), each of two companies. These units all receive their recruits direct from Japan, and have no connection with any division.

Tsu-shima Militia.—One battalion of infantry, a mountain battery, a squadron, and a battalion of fortress artillery. All the men of the island of Tsu-shima who are physically fit perform a year's service in these troops.

Garrison of the Island of Saghalien.—A battalion of four companies, to which each of the four regiments of the 7th Division ("Hokkaido") contributes a company; a troop of cavalry, furnished by the 8th Regiment (8th Division); a section of mountain guns; and a telegraph detachment.

Composition of a Japanese Division.—The normal composition of a division in time of peace is two brigades of infantry, each of two regiments of three battalions of four companies; a regiment of cavalry of three squadrons; a regiment of field artillery of two groups, each of three batteries. (The batteries have six guns, six ammunition wagons, and one battery wagon, all drawn by six horses.) Also a battalion of engineers of three companies and a transport battalion of three companies.

The Number of Units in the Active Army in Peace Time, and their Establishments.

The total number of infantry battalions, including the Tsu-shima battalion, is now 229. Before the war it was 157.

The cavalry musters 73 squadrons, as against 55 before the war.

With regard to the artillery, the artillery attached to divisions now consists exclusively of field batteries. There are altogether 150 field batteries, instead of the 75 which existed before the war. The mountain artillery has been reduced from 39 batteries to 9 only.

The engineers have altogether 54 companies, against 39 before the war.

The transport train has 19 battalions.

There is also the Gendarmerie, amounting to about 4,000 men.

The total strength of the Army in time of peace is between 210,000 and 220,000.

NORMAL ESTABLISHMENTS OF THE UNITS OF THE DIFFERENT ARMS IN TIME OF PEACE.

——	Officers.	Non-commissioned Officers.	Superior Soldiers (gefreite).	Privates 1st Class.	Privates 2nd Class.	Totals.	Horses.
Company of Infantry ...	5	12	18	42	79	156	0
Squadron of Cavalry ...	5	12	14	37	72	140	135
Battery of Fd. Artillery	5	10	10	31	72	128	62
Mountain Battery ...	5	10	10	30	72	127	37
Company of Engineers	5	14	22	43	86	170	5
Company of Railway Engineers ...	5	12	14	30	64	127	5
Telegraph Company ...	7	15	14	32	64	132	7
Company of Transport Train ...	7	18	18	25	291	359	150
Company of Heavy Artillery ...	5	10	10	30	70	125	3

——	Officers and Men.	Horses.
Regiment of Infantry (3 Battalions)	1,950	14
Regiment of Cavalry (3 Squadrons)	462	454
Regiment of Field Artillery (6 Batteries) ...	807	382
Regiment of Mountain Artillery (6 Batteries) ...	807	244
Battalion of Engineers (3 Companies)	544	19
Battalion of Transport Train (3 Companies) ...	1,114	457

ESTABLISHMENT OF A DIVISION IN TIME OF PEACE.

Officers	397
Non-commissioned Officers ...	1,059
Soldiers	9,546
	11,002 men and 1,304 horses.

Command of the Army.

The Emperor is the supreme head of the Army, both in peace and war. In peace time he is assisted by a Supreme Council of Defence, which is intended to ensure complete unity of action between the Ministries of War and Marine. The Supreme Council consists of the Marshals, the Admirals of the Fleet, the Ministers of War and Marine, the Military and Naval Chiefs of the Staff, the Inspector-General of Military Instruction, and some Generals and Admirals specially nominated by the Emperor. Since it was created in 1893 the Council has met twice, once in March, 1901, and again in January, 1904, on the eve of the war.

The actual administrative and executive authorities are the Ministries of War and Marine, the General Staff of the Army (four departments), the General Staff of the Navy, and the Department of Military Instruction. The Chief of the General Staff is independent of the War Minister, and is responsible only to the Emperor.

Up to 1907 the divisions of the Army in Japan were grouped in peace time into three great commands, each containing four divisions. (The Guard Division takes its orders directly from the Emperor.) These commands were those of the East (Tokyo), of the Centre (Osaka), and of the West (Hiroshima). It is not yet known how the more numerous divisions of the new organisation will be grouped. It is as well to remark here that these great commands have no connection whatever with the separate Armies which are formed in time of war.

The government of Formosa and the Pescadores is a post held by a General or an Admiral, who is assisted by a military and a civil staff.

The Supply of Officers and the Military Schools.

In time of peace, officers are appointed solely from the pupils of the School of War at Tokyo. In war time non-commissioned officers may become officers, but they do not, as a rule, rise beyond the rank of captain. Speaking generally, the recruitment of officers in time of peace closely resembles the method followed in Germany. All officers must pass through the War School. Young men are admitted to this institution after an examination. They come from two different sources:—

1. The Cadet Schools.
2. One-year volunteers who are candidates for commissioned rank.

There are six Cadet Schools. Boys enter at the age of 13 or 14 and remain for three years. The future officers then pass two years at the Central Military School of Tokyo. During this period they are attached to a regiment for six months. At the close of the course they can be admitted to the War School.

The candidates among the one-year volunteers are young men who have obtained certain diplomas or who have passed a special examination, and who, after having obtained the consent of the officer commanding the regiment in which they wish to serve, engage as "one-year volunteers, candidate officers."

Candidate officers enjoy certain privileges in their regiments, and in the course of their year of service they are promoted to the rank of sergeant. Afterwards they can be admitted to the War School like the young men coming from the Cadet Schools.

The course at the War School lasts one year, commencing always on 1st December. At the termination of the course the young men receive certificates and are posted to regiments as *aspirants*. It is not till about six months later that they become second lieutenants, after acceptance by the body of officers of the regiment.

In 1904, 500 young men were admitted to the War School at Tokyo.

Promotion.—Promotion is partly by seniority and partly by selection. Selection is chiefly exercised in the case of officers who have passed the Academy of War (or Staff College).

Reserve Officers.—These are obtained as in Germany from officers of the Active Army who have resigned, and from one-year volunteers who have passed a qualifying examination. Reserve officers are obliged to attend a course of instruction lasting five weeks every second year.

The number of Reserve officers in 1907 appears to have been: 34 lieut.-generals, 40 major-generals, 2 paymaster-generals, 9 inspecting paymasters, 10 surgeon-generals, 103 colonels, 210 lieut.-colonels and majors, 2,117 captains and subalterns.

Non-commissioned Officers are obtained: (1) from candidate non-commissioned officers, *i.e.*, young men who, on entering the ranks announce their intention of re-engaging; (2) from the "superior soldiers," analogous to the German "gefreite."

Re-engaged non-commissioned officers receive higher pay and a re-engagement bounty. The amount of the latter depends on the period of re-engagement. After ten years' service they obtain a medal and a further special bounty.

Schools Intended for the Higher Military Education of Officers.

The first of these is the Military Staff School, or War Academy. This institution is intended to extend and perfect the military knowledge of the rising generation of officers, and to fit them both for the duties of the General Staff proper and for those of the "adjutantur." The duration of the course is three years, during which the officers are attached in turn to all arms other than their own during manœuvres. On leaving the College the officers who have done best go to the General Staff proper, the others to the "Adjutantur."

Artillery and Engineers' School.—A school for the special instruction of the young officers of these arms.

Field Artillery Practice School.—This establishment receives captains and lieutenants from regiments, or on leaving the Artillery and Engineers' Schools. They go through courses of three months and two months respectively. The instruction is essentially of a practical nature.

Heavy Artillery Practice School.—A school similar to the above for officers of the heavy artillery.

Cavalry School.—This school has two branches: one for the tactical instruction of captains and lieutenants, and sometimes 2nd lieutenants, of cavalry; the other is a school of equitation for junior officers, and sometimes sergeants, of cavalry, field artillery, and the transport train. The course lasts eleven months.

Military College of Toyama.—This is a sort of advanced school, intermediate between the War School and the Military Staff School. It has three branches: a tactical and fields works branch, a musketry branch, and one for gymnastics and fencing. The officers attending it receive special training in these subjects, and also gain some experience in artillery and small-arm practice. The duration of the courses varies in each branch.

Schools for Non-combatants.—These are:—

The School of Military Administration.
The School of Military Sanitation (Medical School).
The Veterinary School.
The Pyrotechnic School (Ordnance Laboratory School?).
The School of Military Topography.

Remounts.—The horse of Japan is in general an indifferent animal, and the number of men accustomed to deal with horses is comparatively small. The remount question is therefore a difficult one, and the Japanese Army has hitherto been obliged to depend largely on foreign importations (15,000 horses were bought in America in the course of the late war). The north of Japan has the most and also the best horses. The Government is making every effort to improve the horses in the country and to encourage breeding. A horse-breeding and remount department was formed in 1906, and placed immediately under the President of the Council. There are now eleven horse-breeding establishments and three young horse depôts under this department. In 1906 a Commission sent to Europe purchased 54 stallions.

There are also several remount depôts under the Minister of War.

(*To be continued.*)

NAVAL NOTES.

Home. The following are the principal appointments which have been made:—Captains—S. E. Erskine to "Venerable"; H. Chatterton to "Andromache"; C. Maclachlan to "Hibernia."

The second-class cruisers *Flora* and *Cambrian* were recommissioned on the 7th ult. at Colombo for a further term of service on the China and Australian Stations respectively.

Launches.—The new first-class battleship *Neptune*, one of the improved *Dreadnought* class, was launched on the 30th ult. at Portsmouth, the naming and launching ceremony being performed by H.R.H. the Duchess of Albany. The dimensions of the ship are understood to be as follows:—Length, 510 feet between perpendiculars, 560 feet over all; beam, 85 feet, and displacement, 20,250 tons. She will be fitted with turbine engines, to develop 25,000-I.H.P., giving a speed of 21 knots. Her armament will consist of ten 50-calibre 12-inch guns of the latest pattern, disposed in five turrets, three of which will be on the central line, and one on each side of the ship, these latter being placed *en échelon*. She will thus be able to fire the whole of the ten guns on either broadside, whereas her predecessors could only fire eight; in addition, the middle turret on the centre line will be raised and placed close forward of the after one, so that its guns can fire over it, a stern fire of eight guns, instead of six only, will be thus obtained. The secondary armament will, it is believed, be the same as that of the *St. Vincent*, viz., twenty 4-inch guns, but in some quarters it is stated that she will carry 6-inch guns; there will also be three submerged torpedo tubes.

On the same day the new second-class cruiser *Glasgow* was launched from the works of the Fairfield Shipbuilding and Engineering Co. at Glasgow. She is the first of the five new cruisers of the *Town* class to take the water, the contracts for which were placed in November last at Fairfield, Clydebank, Dalmuir, Barrow and Elswick. Her dimensions are as follows:—Length, 453 feet over all; beam, 47 feet; draught, 15 feet 3 inches, with a displacement of 4,820 tons. The ship will be provided with Parson's turbines to develop 22,000-I.H.P., and give a speed of 25 knots. The armament will consist of two 6-inch Q.F. and ten 4-inch Q.F. guns, with two 18-inch broadside submerged torpedo tubes; one of the 6-inch guns will be mounted on the forecastle, where the conning tower—constructed of special steel—will also be placed, the other 6-inch gun will be mounted aft, and five of the 4-inch guns on each broadside. Protection to the vital parts will be provided by a curved steel protective deck extending the whole length of the ship, and further protection to the machinery will be afforded by the bunkers.

Abandonment of the Salvage of "C 11."—After a series of efforts lasting some nine weeks, the attempt to salve submarine "C 11" has been finally abandoned, the *Vindictive*, with the two dockyard tugs and the

Home.

salvage lighters, returning to Sheerness on the 18th ult.; before leaving the spot, a funeral service was held on the quarter-deck of the *Vindictive,* three volleys being fired and the "Last Post" being sounded at its conclusion. Before leaving Haisborough, soundings were taken for the last time, and it was then found that the submarine was completely buried in a sand heap. During the salvage operations there were only twelve days on which work was possible, and on three occasions the weather was so bad that the salvage vessels had to seek shelter. The submarine had been lifted and slung to the lighters, but when being towed in, she was brought to a standstill by some obstruction, supposed to be another wreck, and further progress with her was found to be impossible.

Australia. *Remarks on Colonel Foster's Articles on "The Defence of Australia," by Captain W. R. Cresswell, C.M.G., R.N., Director, Commonwealth Naval Forces (concluded). Laid by order before the Commonwealth Parliament* :—

Colonel Foster's View not in Accord with Present-day Conditions.

The quotation from C. J. Fox is evidently given to oppose the idea of national military training; but it is odd that Colonel Foster should be opposed to a project that relieves the stress upon the Mother Country in all the various Imperial services which he enumerates, due to the existence of foreign bases in our proximity. His is the counsel familiar to us from the Colonial Defence Committee of nearly a generation past, some of it due to a habit of mind attuned to a fixed order of things in a land already at its full development, where change is slow. This mental poise is not only quite out of place, but dangerous in a country at the beginning of its history, which has as its nearest neighbours lands and peoples of immeasurable possibilities, giving many evidences of restlessness under the increasing influence of Western civilisation.

Colonel Foster Objects to Local Defence and Ignores Commerce Defence.

Our critic might be inclined to qualify his estimate of "how little purely local defence is required to guard Australia from aggression" if he realised that this means no local defence at all by sea, except for the squadron maintained under the current Naval Agreement. Here, on more familiar ground, I may venture to differ diametrically from Colonel Foster's views. A Director of Military Studies need not, of course, be regarded as including naval war in his acquirements, but its principles merit something more than airy dismissal. The sea defence and sea capacity of a people are not altogether unimportant in a land with an unbroken sea frontier. There is, to begin with, that homely interest called "Commerce," "Trade" from which we most of us either directly or indirectly get our livelihood in this work-a-day land. Its annual worth to Australia is some £170,000,000. Its consideration has failed to receive honourable mention in Colonel Foster's paper on Australian Defence, but, at the pain of introducing such an item into high defence science, some notice must be accorded it. "The naval force (Imperial), which, though small hostile expeditions may evade it, can certainly stop large ones," says Colonel Foster; but still smaller expeditions of a raiding cruiser or two may, and certainly will, also evade it with far greater ease, particularly to attain the lucky position of having the commerce of Australia at their mercy. Whether the captains of cruisers will prefer to expose their ships to being shelled from forts rather than pick up rich prizes, out of the range of the fort guns, along our coasts (and colliers if coal be needed), will depend solely on their sanity.

Likelihood of Commerce Destruction Admitted.

The mere fact of armed forces being required by us to prevent raiding landings presupposes, first, that their coming to these coasts is *probable;* second, that they can land, since it is probable the Navy may be absent from the point of attack on other and more vitally important work; and, third, that the time and occasion sufficient for landing would more than suffice for the destruction of our coastal commerce. If Colonel Foster proposes, as some other high authorities have believed, that our coastal traffic should cease, and the ships take refuge in port, then he would inflict on the community a daily loss in business that, captures apart, would pay for about two destroyer flotillas of eight vessels each per week. An industrial paralysis and distress would result, made bitter and harder to endure by the reflection that it could have been prevented with ease, but for the counsel of those who failed to grasp the effect of the modern situation on Australia. The loss would not be ours alone, for any interruption of the flow of food and of wool across the high seas would close many British factories, intensifying the distress of the working classes, and lessening the country's war power.

As for the best means of safeguarding our coast from raiders in war, I would refer the Director of Military Studies to the report of a Naval Officers' Committee on the subject (1906), in which an establishment of four ocean destroyers, sixteen *Teviot* class destroyers, and four first-class torpedo boats is recommended. If he has any doubt of the ability of that force to make the Australian coast routes too uncomfortable as a hunting ground for the raiding cruiser, he is commended to any naval officer, preferably one with destroyer service experience, with the enquiry as to whether, if placed in command of that force, he would feel equal to securing the safety of commerce against four unarmoured raiders.

Adverse Criticism of Torpedo Boats and Destroyers Met.

The adverse criticism of torpedo boats and submarines is hardly convincing. It is presumed that torpedo boats include destroyers, which are now used as open sea torpedo boats. They are written off as requiring "highly specialised crews," and therefore inferentially, in Colonel Foster's opinion, beyond Australian capacity. To this it is sufficient to say, as to torpedo boats, that they have been on the establishment of the Victorian Division, and used and regularly exercised since 1885, and the Director of Military Studies would be welcomed as a visitor during the training months at the Naval Depôt at Swan Island, Queenscliff, or whenever he cares to do the depôt the honour of a visit.

Submarines apart, with their highly specialised crews and limited spheres of action, it is clear that Colonel Foster underrates the efficiency of torpedo attack. His Tsushima figures are not sufficient; and, besides, the gyroscope and increased range have made a complete change in torpedo efficiency. If not, we should hear of some decrease of the number of destroyers ordered and built, instead of their continuous increase. We have been fortunate, too, as to hear personally from the first of torpedo authorities criticism of some value of the various torpedo boat attacks by the Japanese, and this criticism did not point to any fall in the value in which British destroyers and torpedo craft are estimated as war implements in the Royal Navy.

Colonel Foster's despair of our coastal defence by torpedo craft, either because torpedo boats want specialised crews, or because it is "sometimes rough," cannot be accepted as the last word on the subject, nor induce consent to the alternative that our coasts may be left clear for "small hostile expeditions" to batten on our commerce, and paralyse the country's business.

Australian Naval Co-operation.

It would be of advantage if we could learn what it is that really stands in the way of naval co-operation by Australia. To drive a cruiser away with a 6-inch gun from a fort is quite orthodox and correct war; but to have such a gun afloat and drive the enemy not only beyond damaging distance of the port, but of the trade on which the port lives, is somehow wrong. Similarly, it is proper and correct war to cross the seas and attack with our land forces the enemy's bases, which might be jumping-off places and coaling stations for raiding cruisers, but of ourselves or of our own efforts to attack and destroy on the intervening seas the vessels using those bases is quite improper. Why may we not aid the Empire and safeguard ourselves by doing these things? It would be useful to learn on what logical grounds such ideas can be justified, for they evidently underlie Colonel Foster's naval views.

We would recommend, as a fair precedent of what we might expect under the circumstances he would place us in, the case of a people similarly situated and conditioned to ourselves, a fringe population occupying a wide range of latitude, and with consequently a wide distribution of products, and also, like ourselves, largely or entirely dependent on the coastal traffic route for the exchange of those products for their daily food and business. Unfortunately, they utterly neglected the defence of their coastal route, and thought they need only defend their ports. This precedent will be found in the American war of 1812 (Captain Mahan), and the destitution of the States inflicted on them by the enterprise of hostile cruisers is precisely the fate we should meet by adopting the same short-sighted policy. The importance of a country's commerce is not one that can be left out of consideration in any defence policy. The development to the fullest of our defence capacity by national training and the securing of our coasts by an efficient coastal flotilla are the first steps to be undertaken. A land force without means of gaining intelligence seaward in an island country, except by cables, which might be cut, is at a hopeless disadvantage. The land and sea forces are complements of one another, and in their gradual growth and development is our only hope of adequately preparing to meet the heavy work which may be soon awaiting us.

Australia.

Our Present Position—Doctrine of Complacency Fatal.

In the matter of defence generally, there appears to be failure to realise that causes and conditions that have affected other people must similarly affect ourselves. A dead angle, a blind spot, in our mental outlook is discovered whenever our own case is under review. It is not realised that what has happened to other peoples and nations must, under similar conditions, happen to us. British sea supremacy for a century, and in Australia the added safety of thousands of miles of ocean, have been the main contributing causes to our indifference. The merest outline knowledge of history, and a glance at a map of the world, noting the rapid rise in sea power of certain nations, and their necessities for natural expansion, must convey a warning. Do we expect that the upward grade in the curve of the strength of foreign Navies will cease or be reversed at the point when further ascent will render our position here insecure? It would seem so. Yet there is nothing more certain than that it will not. And are we to wait patiently or in perfect oblivion of this until the situation is one beyond our power to remedy? In every-day life it is best, we are told, to take "short views." Those responsible for national security cannot restrict their view to a less period than a generation ahead. The easy complacency of to-day is the most powerful ally of Australia's future foe, and we can only be aroused from it by a realisation of the cold, sober facts of our position, which should surely awaken us, though these are hard to state without their smacking of the oratorical or sensational. They were plainly and seriously considered by our late Governor-General, speaking with full knowledge and authority, and with all the impressiveness of the occasion—his last words in Australia. Could anything be in greater contrast to Lord Northcote's warning than Colonel Foster's statement that "we cannot fail to see how little purely local defence is required to guard Australia from aggression"?

Claiming no special authority for my views, except that they are those of a naval officer who has been an anxious student of the dangers and needs of Australia, I am fully alive to the presumption of criticising the opinions held by Colonel Foster, Director of Military Studies to the University of Sydney. I honestly think them of great value and importance to us, but make the suggestion, in all modesty, that his outlook is too restricted to technical military study to cover the far wider field of national strategy, and the trend of the growth of the peoples and the forces affecting us. These should have a far larger part in our minds if we are to succeed in devising the lines of defence within which our national growth can be developed in security.

W. R. Creswell, *Captain*,
Naval Director.

France. The following are the principal promotions and appointments which have been made :—

Rear-Admirals—L. V. Marin-Darbel to be Vice-Admiral; P. P. Lecuve to command of Tunis Naval Division and Navy of the Regency. Capitaines de Vaisseau—L. R. Dartige du Fournet to Rear-Admiral; E. N. Benoit to "St. Louis"; M. L. Delafon to "Bretagne" and Boys' Training School;

France.

F. Fournet to "Carnot"; J. F. Amet to "Dunois" and command of the Second Torpedo and Submarine Flotillas of the Channel; C. De Marliave to "Lahire" and command of First Torpedo and Submarine Flotillas of the Mediterranean; L. A. Mottez to "Cassini" and command of First Torpedo and Submarine Flotillas of the Channel; Z. A. Schwerer to "Justice"; P. A. De Gueydon to "Borda"; A. A. Tracou to "Vérité"; F. M. Lahalle to "Victor-Hugo." Capitaines de Frégate—C. L. Estienne to "Bombarde" and First Ocean Torpedo Flotilla; F. A. Boyer to "Javeline" and Third Ocean Torpedo Flotilla.—*Journal Officiel de la République Française.*

Report of the Parliamentary Commission of Enquiry into the State of the Navy.—The following abridgement of the *Rapport* of the Parliamentary Commission, under the presidency of M. Delcassé, appointed by the Chamber to report on the condition of the Navy, is given by the *Temps*:—

I.—*Naval Construction.*

The Commission having ascertained that in the last ten years Parliament has been asked to authorise the commencement of ships, the plans of which, for the most part, had not been definitely decided on.

That months and years generally separate the different contracts for hull, turrets, boilers, etc., entailing a considerable loss of time and money, and that this has been notably the case with the battleships of the *Patrie* class and the armoured cruisers *Waldeck-Rousseau*, *Ernest-Renan*, and *Edgar-Quinet*.

That, moreover, important changes have been made during the building of ships, notably as regards the artillery of the *Justice*, *Démocratie*, *Liberté*, *Vérité*, and the armoured cruisers *Ernest-Renan*, *Waldeck-Rousseau*, and *Edgar-Quinet*, changes which tend to destroy homogeniety—one of the most important characteristics of a good fleet.

That the greater part of these defects are aggravated in the six battleships of the *Danton* class, the preliminary contract for which, signed in December, 1906, has had hundreds of changes made in it since.

Proposes to the Chamber :—

1. To severely blame such proceedings, which are prejudicial to the public finances, and incompatible with rational, methodical and rapid construction.
2. And that it should decide that henceforth it will only authorise the construction of a ship after receiving assurances that the plans are at least in all essential particulars definitely drawn and the contract ready for signing.

II.—*Arsenals.*

The Commission having ascertained that our naval arsenals are not actually in a condition to satisfactorily and with requisite rapidity carry on at the same time both new construction and repairs to ships of the fleet.

That tools and machinery are, generally speaking, insufficient and out of date.

That the abolition of piecework coincident with a reduction in the daily hours of labour, and the weakening of the power and authority of the heads of departments, has been the consequence of a notable diminution in production.

That a want of material has sometimes caused a stoppage of work.

Proposes to the Chamber to decide :—

That in the interests of the Navy, as well as of the public finances, our arsenals be supplied with modern tools and machinery to admit of a *maximum* production in a *minimum* time.

That it must be firmly maintained that work goes on for a full eight hours daily.

That piece work be re-introduced as far as possible, together with equitable remuneration, experiences at Brest and Ruelle having shown that its introduction has produced excellent results.

That in certain workshops, where it would not be advisable to introduce piece work, the workmen to receive sufficient wages to make up the difference.

That the decree of 13th June, 1907, be revised so as to give heads of departments greater powers of reward and punishment.

That before sending any work to be carried out by a private firm it be ascertained whether the arsenals are in a position to undertake it.

And for the prompt execution of work often delayed by reference to the Central Authority, greater power of decision be vested in the *Préfets Maritimes* and the Commanders-in-Chief of the squadrons.

III.—*Contracts for the Navy.*

The Commission having ascertained

That prices of materials for the Navy have increased of late.

That the prices of turbine engines in particular appear excessive.

That this increase in price may be attributed in great measure to the fact that the Navy Contracts department does not stand out sufficiently against the demands of contractors, and that too many useless clauses are inserted in the contracts.

Proposes to the Chamber :—

To request the Control department to endeavour by every means to obtain a reduction of prices, particularly by the suppression of certain penalties in the terms of contract which are of no use to the Navy.

To abolish, except in certain cases, all premiums to contractors, simply requiring the results which are thought necessary and sufficient.

IV.—*Boilers.*

The Commission proposes that the Chamber should express its regret :—

1. That for the past ten years Ministers of Marine have neglected to employ competition to obtain a reduction of prices in the purchase of two boilers which are considered the best;
2. That the Minister of Marine, having in a letter of 5th August, 1905, consulted the technical committee as to the type of boiler to be adopted for the *Edgar-Quinet* and *Waldeck-Rousseau*, did not afterwards apply for tenders from the four firms designated by the committee, but selected two firms only from the list supplied;

3. That for the six battleships of the *Danton* class, the Minister, without even consulting the Technical Committee, took upon himself to order an equal number of boilers from the before-mentioned two firms;
4. That in his selection of boilers the Minister has not, in the majority of cases, chosen the type which the Commission of Enquiry have found to be most in favour with naval engineers and mechanicians;

And decides that henceforth, unless it be explained to Parliament that it is impossible, tenders shall always be asked for from all the firms recommended by the Technical Committee.

V.—*Artillery.*

The Commission having ascertained

That the four divisions of battleships and the division of armoured cruisers of the Mediterranean Fleet have not their full allowance of steel shell on board.

That the two divisions of armoured cruisers of the Northern Squadron have not the third of their regulation supply of those projectiles.

That for both the Mediterranean and Northern Squadrons there is no reserve stock of steel shell ready.

Considering

That it appears from the statements of the Minister of Marine and the artillery department that the problem regarding steel explosive shell was decided for small calibre guns in 1905 and for heavy guns in 1906,

Proposes to the Chamber

To express its serious regret that the necessary diligence has not been shown during the last three years to furnish our squadrons with this projectile and to constitute a reserve stock.

The Commission having also ascertained

That it was only towards the end of February, 1909, that the pattern of shell was decided on for the six battleships of the *Danton* class which were ordered in December, 1906, and are due to be completed in December, 1910, and that the time is now too short to allow of the necessary quantity of shell being manufactured by the latter date, and that also no credit has been taken in the Budget of 1909, for this purpose,

Proposes to the Chamber

To blame the improvidence and dilatoriness which this situation reveals.

VI.—*Docks and Arsenals.*

The Commission having ascertained

That the programme of works drawn up in 1901 to place the military ports in a position to deal with the new ship construction of 1900 has only been partly executed,

France.

That nothing has been done up to the present to provide docking accommodation for the battleships of the 1906 programme,

Proposes to the Chamber

To blame the improvidence and carelessness which these facts display.

VII.—*Central Administration.*

The Commission having ascertained

That neither unity of views, co-operation, method nor definite responsibility exists between the different branches of the central administration, and that there is too often negligence and confusion,

Proposes to the Chamber

To order a reorganisation of the central administration, which will assure co-ordination of effort and leave the head of each great department responsible for carrying out the measures which have been decided upon after collective deliberation under the presidency of the Minister.

This report of the Commission of Inquiry has been, and still is being, debated in the Chamber, and resulted indirectly in the fall of the Clemenceau Ministry on 18th July.

Committee's Report on the "Danton's" Mishap. — The committee ordered to inquire as to the causes of the failure to launch the battleship *Danton* at Brest has reported the following reasons:—

1. The new method of greasing the ways resulted in a part of the fatty matter being absorbed and part floating away on the water, which rose higher than expected on the day of launching.
2. The resistance presented by the large area of the stern when taking the water.
3. The incline given to the ways was not sufficiently steep.
4. The *Danton* having started under bad conditions, moved slower and slower until she brought up.

The Naval Programme.—It is stated that the *Conseil Supérieur de la Marine* at its recent meeting at the Elysée came to a definite conclusion regarding the future constitution of the French fleet, which is to be as follows:—

45 battleships.
12 scouting cruisers.
60 destroyers (sea-going).
84 destroyers for mobile defence.
64 submarines.

It will be remembered that the 1900 programme is as follows:—

28 first-class battleships.
24 armoured cruisers.
52 destroyers.
263 Torpedo boats.
38 submarines.

France.

And when the Budget for 1907 was introduced with the *Danton* class of battleship it was stated by the Admiralty that in theory the constitution of the fleet had been fixed as follows :—

38 battleships.
20 armoured cruisers.
6 scouts.
109 destroyers.
170 torpedo boats.
82 submarines (for offence).
49 submarines (for defence).

Taken together, these three programmes show that the constitution of the fleet is to be changed both in the number of armoured ships and the importance assigned to each class of ship. The number of battleships has increased, armoured cruisers have disappeared, as also have torpedo boats. Less importance is given to submarines, and in their place scout cruisers and destroyers are given greater prominence. Thus, according to the programme of the *Conseil Supérieur de la Marine*, real military value is only given to the battleship, the scout cruiser, and the destroyer.

The date limit for the completion of the battleships is given as 1925, and as the life of a battleship is fixed at 25 years, it follows that at that date the only battleships now built fit for service will be the six of the *Patrie* and six of the *Danton* class. In the sixteen years to come, therefore, it wll be necessary to build 33 new battleships, 12 new scout cruisers, and more than 100 destroyers, besides submarines, so that this new programme is a vast and expensive one.—*Le Temps.*

United States.

Naval Bureau of Ordnance.—Denying the widely-circulated statement that our latest type 12-inch guns are inferior in power to those of foreign Navies, Rear-Admiral N. E. Mason, Chief of the Bureau of Ordnance, U.S. Navy, in his annual report asserts that the 12-inch guns mounted on the eight latest battle-ships already in commission in our Navy, are equal or superior in power to any 12-inch gun afloat anywhere in the world, and the 12-inch guns of our battle-ships in course of construction will be equal or superior in power to any 12-inch foreign gun of which authentic information can be had. Early in the year the Bureau completed the design of a 14-inch gun, designed to fire a 1,400-pound projectile. All the minor difficulties originally experienced with the 3-inch semi-automatic gun and mount have been overcome, and these guns are being rapidly completed and installed on board ship to replace 3-pounder and 6-pounder guns. The 5-inch gun and mount, tested at the naval proving ground, have given satisfactory tests. The gun uses a cartridge case, and will have a service muzzle velocity of 3,150 foot-seconds, using a fifty-pound projectile. It is especially adapted for use in torpedo defence.

The only important ordnance development of the year was the adoption of a new form of projectile with less air resistance and a material increase in flatness of trajectory and striking energy at long ranges. Recommendation is made for authority to purchase ordnance material in limited quantities abroad in case of urgent need, to purchase articles, the character of which or the ingredients of which are of such a nature that the interests of the public service would be injured by publicly divulging them, in such manner as he may deem most economical and efficient.

Satisfactory results having been obtained in experiments in arranging air ducts for gas-ejector attachments, all guns are now being manufactured with the most efficient arrangement. The principle of using a closed turret and keeping the turret chamber under a moderate air pressure has been approved. The arrangement also ventilates the turrets in action. The turret gun mounts of the *Florida* and *Utah* will be practically of the same type as those of the *Michigan* and *Delaware* classes. The ammunition hoists for all these vessels will be of the two-stage type, but differing in details for each class. Hand hoists will be installed in the turrets of all three classes, and in all future turret installations. Those of the *Florida* and *Delaware* classes will be entirely independent of the main hoists, but there is not sufficient room for independent hand hoists in the *Michigan* class, which made it necessary to fit the main hoists with mechanisms for both power and hand purposes. For all classes the complete separation of the gun chambers from the handling room is insured at all times. The stowage of the necessary electrical apparatus in the earlier type of turret installations has been arranged so as to render the apparatus practically innocuous. Centre-line bulk-heads have also been fitted in the double-gun turrets to increase the safety of loading operations of either gun, and, where possible, will be fitted in vessels now refitting. A trial installation of the trunked-in single stage hoist has been placed in the 12-inch turrets of the *Idaho*, and one will be placed in the 13-inch turrets of the *Oregon*. Trial installations of the independent hand hoists are also to be tested in the turrets of the *Idaho* and *Oregon*, and if proved efficient all turrets should be similarly fitted. The hand-worked power hoist and rammer equipments of the 8-inch turrets of the *Vermont* and *Louisiana* have proved so satisfactory on the Pacific cruise of these ships that a similar change has been made in the 8-inch turrets of all vessels in commission, except the *Kentucky*, *Kearsage* and *Olympia*, and will be made in the 8-inch turrets of ships now refitting. The advantages of hand installations in 8-inch turrets are complete separation of turret chambers from handling rooms at all times, much less liability to breakdowns, and increased rapidity of fire. Friction training gear for broadside mounts has been installed on all modern 6-inch mounts in service, and is being installed on 5-inch mounts. The modernising of the mounts of the 4-inch and 5-inch 40-calibre guns and furnishing them with new telescope yoke sights have progressed satisfactorily. Reports from all ships show that the telescopes and sights of the later type for all calibres are satisfactory. The efficiency of the 7-inch guns was demonstrated by the last record target practice, but there is need of an improved type of elevating and training gear for this gun where there is a considerable swell.

Fire control systems and instruments have been installed on eighteen battle-ships in the year, including all those of the Atlantic Fleet, and the work is well advanced on the armoured cruisers and the *Charleston* class. Range-finders of two new types and of domestic manufacture have been contracted for for some of the new ships. The larger ships are equipped with range-finders of greater range and accuracy. The present range-finders will be used on the smaller cruisers and gun-boats. New ammunition hoist motors of greater power should be provided for many of the older vessels. The automatic ammunition hoist motor controller should be fitted to all turret hoist motors and the mechanical control gear for elevating motors of turret guns to all turret guns. All recent types of turret sights have given satisfaction in service. Important improvements will be made in the turret installations of the *Idaho*, *Massachusetts* and *Oregon*.

The situation as to the reserve supply of powder which the Bureau has been accumulating for the last two years is much improved, although the supply is not as large as it should be. The Navy and the Army now purchase and manufacture their powder under exactly the same conditions with resultant economy. The powder has not been changed, and in battle we could do better shooting with it than with any other kind, despite whatever may be the disadvantages as regards cost, lack of keeping qualities, tendency to "flarebacks," etc. Our powder contains no nitro-glycerine, and Services formerly favouring nitro-glycerine powders now show a disposition to abandon them. Magazine refrigeration is recommended as capable of trebling the life of powder on board ship. At present there is no material or method which will make any smokeless powder able to withstand storage conditions on board ship for indefinite periods. A laboratory has been established in the Philippines for testing and watching powder.

Armour-piercing projectiles, loaded with high-explosive bursting charges, will in the future comprise the entire battle supply for the main batteries of capital ships. The reserve supply of these is much too small. With the aid of private firms there has been developed a new design for armour-piercers which gives vastly improved accuracy and longer ranges. This improvement is the longest step in advance in ordnance material for several years. Minor improvements increasing the reliability and convenience of cartridge cases, powder tanks, cartridge bags, etc., and reducing the cost of manufacture have been made. The cruise of the fleet in the Pacific has amply justified the recommendation in previous reports for two ammunition ships for use with the Atlantic and Pacific Fleets. The desirability of replacing all rifles and machine guns of rifle calibre now in the Navy with the type now used in the Army and National Guard is emphasised as in previous reports. Through the designing of improved dotters, the Morris-tube rifle can be abandoned and gun pointers can receive more accurate training without the danger attending the use of rifles on board ships. Improved sub-calibre attachments for both turret and broadside guns will soon be available for issue.

The supply of torpedoes is still unsatisfactory; but torpedo-vessels may soon be supplied with torpedoes of an efficient type for target practice owing to the ordering of torpedoes abroad. The converting of twenty large torpedo-boats has been begun. The future needs of the Service may call for increasing the capacity of the torpedo factory at Newport, which now has a capacity of only fifty torpedoes a year, whereas, even without any shortage as now exists, at least 100 torpedoes will be needed each year. The manufacture of 5-metre by 21-inch submerged torpedo-tubes has progressed, so that tubes can now be installed as vessels become available. An improved type of central pivot tube is being designed for the new destroyers. A contract has been let for ninety-five mines of a new type which can be planted from a large vessel, and estimates provide for mine outfits for one mine-ship. Plans are being formed for a torpedo station on the Pacific Coast. An item of 200,000 dollars is included in the estimates for the expense of tests of ordnance material. An annual fund for experimental work is now a necessity.

During the year 203 guns of all calibres, from 1-pounder to 12-inch, have been completed at the Naval Gun Factory, and 408 have been well advanced; sights and sight fittings have been made for 398 guns and partially made for 474 guns; gun mounts have been manufactured in numbers corresponding to new guns of all calibres; and at the same time an immense amount of work has been done in the way of modifying and improving both guns and mounts of older types in service. During the three months preceding the departure of the Atlantic Fleet from Hampton Roads for the Pacific, 595 shipments were made from the gun factory, aggregating 3,091,536 pounds, and consisting of 2,827 boxes and crates, in which were 146,786 pieces of manufactured ordnance. Progress in armour-piercing shell of large calibre is almost at a standstill at the naval proving ground and powder factory of Indian Head, Md. Great difficulty seems to be encountered in furnishing 12-inch armour-piercers that meet the several requirements. In the first ten months of the fiscal year the powder factory made 912,293 pounds of new powder, besides working into good powder 107,381 pounds.

The demand for officers for sea duty in the year made it impracticable to maintain a class under instruction in ordnance. It is practically impossible for any officer to become an expert in ordnance with the limited experience to be obtained on board ship, and success as an ordnance expert calls for the taking up of this line of work early in one's career. The elimination by the Department of the estimates for increase in salary for the civilian force is viewed with regret by the Chief of the Bureau.—*Army and Navy Journal.*

MILITARY NOTES.

Home.

The following are the principal appointments which have been made:—Colonels—G. G. A. Egerton, C.B., to command Infantry Brigade at Malta, with temporary rank as Brigadier-General; P. S. Wilkinson, to be Inspector-General of West African Frontier Force, with temporary rank as Brigadier-General; J. A. L. Haldane, C.B., D.S.O., General Staff (Eastern Command), with temporary rank as Brigadier-General; E. A. Fanshawe to command Artillery (6th Division, Irish Command), with temporary rank as Brigadier-General; S. R. Rice to be Chief Engineer (South-Western Coast Defences); W. N. Congreve, V.C., M.V.O., to be Commandant School of Musketry, Hythe; J. A. Ferrier, C.B., D.S.O., to be Commandant of the School of Military Engineering.

Indian Army.—Lieut.-General—Sir B. Duff, K.C.B., K.C.V.O., C.I.E., to be Military Secretary at the India Office. Major-Generals—Sir D. Haig, K.C.V.O., C.B., to be Chief of the Staff; C. St. L. Barter, C.V.O., C.B., to command of Bombay Brigade (Southern Army). Colonels—E. H.

Home.

Rivett-Carnac to command of Ambala (Cavalry) Brigade (Northern Army); W. R. Birdwood, C.I.E., D.S.O., to command of Kohat Brigade, with temporary rank as Brigadier-General.

Interim Report of the Advisory Committee for Aeronautics :—

To the Right Honourable H. H. Asquith, M.P., First Lord of the Treasury.

MAY IT PLEASE YOUR LORDSHIP,—

The Advisory Committee for Aeronautics, appointed on 30th April, have the honour to present an interim report as follows :—

The Committee have held four meetings, two at the War Office, one at the Balloon Factory, Aldershot, when the work in progress there was inspected, and the fourth at the National Physical Laboratory.

In accordance with the arrangements made at the time of its appointment, the work of constructing and experimenting with either aeroplanes or dirigibles remains with the Government Departments with which the Committee is connected. It is the duty of the Committee to advise on questions submitted by those departments, to deliberate on and determine the scientific matters arising out of these questions, to arrange, when necessary, for experimental work at the National Physical Laboratory, and to advance the applications of the science of aeronautics by such means as may seem best. With these objects in view the work of the Committee has, for the present, been in the main preliminary in its character.

Reports as to existing knowledge.—In the first place it appeared desirable to obtain reports as to the present state of knowledge on the questions to be considered, while the information afforded by the reports has also formed the basis of the experimental work now being undertaken at the National Physical Laboratory. It is proposed later to publish in an accessible form such of these reports as contain matter of more general interest.

The reports already arranged for include the following :—

Memorandum by Mr. A. Mallock on general questions to be studied.

Report by Dr. T. E. Stanton on recent researches on the forces on plane surfaces in a uniform current of air.

Memorandum by Sir G. Greenhill on stability.

Memorandum by Sir G. Greenhill on the screw propeller.

Report by Dr. W. N. Shaw on wind structure, dealing especially with the phenomena of gusts, and on the variation of wind velocity with height.

Preliminary report by Mr. F. W. Lanchester on petrol motors for aeronautical purposes.

Report by Dr. W. Rosenhain on light alloys.

Report by the Secretary on existing knowledge on the subject of the accumulation of electrostatic charges on balloons, and the precautions to be adopted to avoid the dangers arising therefrom.

Additional reports are promised on other matters of importance. The Committee have also arranged for the preparation of abstracts of published papers and memoirs relating to aeronautics which are of special interest.

Preliminary Programme of Work.—With a view to determining the work to be undertaken first at the National Physical Laboratory, the following list of experiments was compiled :—

(I.) GENERAL QUESTIONS IN AERODYNAMICS.

(1.) Determination of the vertical and horizontal components of the force on inclined planes in a horizontal current of air, especially for small angles of inclination to the current.

(2.) Determination of surface friction on plates exposed to a current of air.

(3.) Centre of pressure for inclined planes.

(4.) Distribution of pressure on inclined planes.

(5.) Pressure components, distribution of pressure and centre of pressure for curved surfaces of various forms.

(6.) Resistance to motion of bodies of different shapes; long and short cylinders, &c.

(7.) Combinations of planes; effect on pressure components of various arrangements of two or more planes.

(II.) QUESTIONS ESPECIALLY RELATING TO AEROPLANES.

(8.) Resistance components for aeroplane models.

(9.) Resistance of struts and connections.

(10.) Resistance of different stabilising planes, both horizontal and vertical.

(11.) Problems connected with stability:—

  (i.) Mathematical investigation of stability.

  (ii.) The stability of aero curves of different section and of different plan (Turnbull's experiments).

  (iii.) Effect of stabilising planes, and investigation of questions as to their size and position.

  (iv.) Effect of rudder action.

  (v.) Effect of gusts of wind.

  (vi.) Investigations as to stability of models for different dispositions of weight, &c.

(12.) Materials for aeroplane construction.

(13.) Consideration of different forms of aeroplane, monoplane, biplane, &c.

(14.) Other forms of heavier than air machines, helicopters, &c.

(III.) PROPELLER EXPERIMENTS.

(15.) Efficiency, and the effect on the efficiency of variations in blade area, pitch and slip.

(16.) Positions relative to the machine.

(IV.) MOTORS.

(17.) Efficiency.

(18.) Reliability and steadiness.

(19.) Materials of construction.

(20.) Design.

(V.) QUESTIONS ESPECIALLY RELATING TO AIRSHIPS.

(21.) Materials of construction, strength, &c.

  (i.) Alloys, wood, bamboo, &c.

  (ii.) Balloon fabrics.

  (iii.) Wires, cords.

(22.) Production of hydrogen.

(23.) Gas-tightness of fabrics.

(24.) Detection of leakage.

(25.) Air resistance to ships of different form; experiments on models.
  (i.) Effect of shape of ends.
  (ii.) Effect of length.
  (iii.) Variation with speed.
  (iv.) Distribution of pressure as affecting stability, strength in construction, position of propellers, fins, &c.
  (v.) Total resistance of models rigged to represent different balloons.

(26.) Questions as to stability of airships in different positions.

(27.) Stabilising and steering appliances, fins, rudders, &c.; form and position.

(28.) General design.

(29.) Navigation of airships. Mooring, &c.

(30.) Efficiency and position of propellers for airships.

(31.) Motors for airship work.

(VI.) METEOROLOGY.

(32.) General information relating to variations of wind velocity and phenomena connected with gusts of wind.

(33.) Relative variation in speed and direction of the wind at different heights above the earth's surface.

(34.) Vertical movements in the air.

(35.) Rotary movements in the air.

(36.) Electrical phenomena.

(37.) Formation of clouds, snow, hail, &c.

In preparing this list the Committee received valuable assistance from Colonel Capper, the Superintendent of the Balloon Factory, who, at their request, visited the National Physical Laboratory to confer with the Director and Dr. Stanton, Superintendent of the Engineering Department.

Arrangements for Experimental Work.—After considering this list the Committee came to the conclusion that it was desirable that the following should be undertaken at once :—

(*a.*) Experiments on air resistance and on air friction as outlined in (1) to (7) above; and including experiments on models of airships and aeroplanes, resistances of wires and connecting stays, &c.

(*b.*) Motor tests.

(*c.*) Propeller experiments.

(*d.*) Tests for gas-tightness of materials suitable for dirigibles.

(*e.*) Experiments on the behaviour of different materials with reference to the accumulation of electrostatic charge, and generally as to means of protecting airships from the effect of electrical discharges.

Accordingly the Executive Committee of the Laboratory have, at the request of the Committee, made the necessary arrangements for carrying out this part of the work, and the Lords of H.M. Treasury have undertaken to include in the estimates for the work of the Laboratory presented to Parliament provision for the funds necessary.

The Committee trust that the following details of this part of their work may prove of interest :—

Home.

Some addition to the existing buildings at the Laboratory has been found necessary to provide space for part of the experimental work, while a special building is also being provided for the whirling table referred to below. The equipment which is now being installed comprises the following :—

(i.) A wind channel 4 feet square and about 20 feet long, with a fan giving a draught of 40 feet per second, special arrangements being made to obtain a uniform flow. This will be employed for the determination of the air pressure components on plane and curved surfaces, for the resistance of models of airships and aeroplanes, and for observations on the centre of pressure, frictional resistance, stability, &c.

(ii.) A whirling table of about 70 feet diameter. For this a special building is being erected; the table itself is under construction in the Laboratory. It will be employed for a repetition of Dines' and Langley's experiments, as well as for propeller tests, which are urgently called for.

(iii.) Two wind towers for experiments in the open. These will enable some of the air-channel experiments to be repeated on a larger scale in the natural wind, and will, it is hoped, afford valuable information as to the varying conditions which obtain in practice.

(iv.) Apparatus for efficiency tests on high-speed motors up to 50 H.P.

In addition certain machine tools, &c., are being provided for workshop use.

For other necessary work the existing equipment in the various departments of the Laboratory will be available. Thus, strength tests on materials of construction can be made as required; work on light alloys is in progress; experiments on gas-tightness of balloon fabrics and on means of detection of leakage are being arranged. The tank now under construction for experiments on ship models will be provided with a carriage able to attain a velocity of 25 feet per second over a run of 500 feet, and will, it is hoped, also prove of value for air pressure and propeller experiments, while a lighter carriage could be designed for special experiments at higher speeds.

Communications with the Aeronautical Society, the Aero Club, and the Aerial League.—With a view to rendering their work as helpful as possible to all those who are engaged in practical aeronautical work the Committee put themselves in communication, during May, with the Aeronautical Society, the Aero Club and the Aerial League, and invited suggestions as to the directions in which the assistance of the Committee would be of most value. These bodies have undertaken to give the matter careful consideration, and to lay their views before the Advisory Committee at an early date; and at their last meeting the Committee received a letter from the Aerial League giving an account of the interesting programme the League propose to carry out. To this the Committee have replied that they will be glad to co-operate with the League in all such branches of their work as fall within the scope of the Committee.

Designs submitted by Inventors.—The position of the Committee with regard to inventions and ideas which their authors desire to be treated as confidential has been raised by various requests received.

Home.

On this point the Committee have decided that it is not within their province, as a body advising Government Departments, to receive confidential communications from inventors and others which they are not free to use unreservedly in the advice it may be their duty to give to the Government.

Inventors wishing to bring their ideas before the Committee must previously take the steps necessary to protect their inventions, unless they are prepared to allow the Committee to use them freely in their work.

Confidential communications forwarded to the Admiralty or the War Office will be dealt with by these Departments as they may judge desirable.

Signed on behalf of the Committee,

RAYLEIGH,

24th July, 1909. President.

Members of the Committee.—The Right Honourable Lord Rayleigh, O.M., F.R.S. (President); Dr. R. T. Glazebrook, F.R.S. (Chairman); Rear-Admiral R. H. Bacon, C.V.O., R.N.; Mr. Horace Darwin, F.R.S.; Sir G. Greenhill, F.R.S.; Major-General Sir C. F. Hadden, K.C.B.; Mr. F. W. Lanchester; Mr. H. R. A. Mallock, F.R.S.; Professor J. E. Petavel, F.R.S.; Dr. W. N. Shaw, F.R.S. Secretary, Mr. F. J. Selby.

Austria-Hungary.

Military Education of Young Men in Hungary.—The *Armeeblatt* states that the Hungarian Government has for some time past been attaching great importance to the military education of young men intended for officers and non-commissioned officers in the Army. In the principal towns of the country, the pupils in the two upper classes in the Secondary Schools, including even theological and law students, now go through a course of military drill.

The number of these classes is continually increasing, and there are now 141 of them.

The Minister of National Defence, who encourages by every means in his power these patriotic efforts, has, in agreement with the Minister of Education, appointed a committee, who have been organising at Budapest a prize competition between the schools and sporting clubs in rifle target practice and gymnastic exercises.

Modifications in the Department of Military Constructions.—All works not immediately connected with fortifications have been, up to the present, entrusted to a special corps styled the *Militärbauingenieure.* The corps for the future is to be known as the *Ingenieur-offiziers-Korps,* and its strength has been increased by :—

1 Engineer general, ranking as a lieut.-general;
1 Engineer general, ranking as a major-general;
21 Chief Engineers, ranking with colonels, lieut.-colonels and majors;
11 Engineers, ranking as captains;
11 Assistant-Engineers, ranking as lieutenants.

The total of the engineers of all classes being raised from 110 to 155.

The secondary *personnel,* consisting of directors of works, clerks and heads of workshops, is raised from 418 to 528 (217 clerks, 72 directors of works, and 239 heads of workshops).—*Revue Militaire des Armées Etrangères.*

Austria-Hungary.

What a War with Servia would Cost.—A study recently appeared in *Danzer's Armée-Zeitung* as to the expense which a war between Servia, Montenegro and Austria would entail, and the effect it would have on the financial situation in the Dual Monarchy.

The author, who is anonymous, gives his views as follows:—

For a population of a little more than two millions and a half of inhabitants, Servia has more than 400,000 men fit to bear arms; but that does not mean that she has an army of this strength, first, because a large proportion of these men have no real military training, and secondly, because the supply of arms and munitions do not nearly suffice for an effective of this strength.

A short time ago the Minister of War declared that—if the credits he asked for were granted—Servia would, in a few weeks time, dispose of an army of 250,000 men ready to take the field.

This would seem to be a somewhat exaggerated estimate. Two hundred and fifty thousand men represents 10 per cent. of the whole population; it would mean for Austria an army of 4 millions and a half, a number which could never be reached in reality. In 1870, Germany only called out 3 per cent., and France 4 per cent. of the whole number of the population.

The simultaneous employment on the same field of battle of the whole army can neved be counted upon, because deductions must be made for the garrisons of fortified towns, reliefs, new formations, etc. Without wishing in any way to under-estimate the possible force of the enemy, it is yet probable that the field army would not exceed 160,000 men.

But no more than 110,000 men could be armed with magazine rifles and Q.F. guns, since there are only permanent *cadres* for this effective, which would form, in case of war, 6 divisions that could be compared with the troops we should employ. It would therefore appear that we ought to be in a position to ensure success if we employed 160,000 of our active army, that is to say, 4 Army Corps of 2 divisions each.

But if we are not at the same time brought face to face with another enemy—Italy or Russia—it would be better to make certain of a large numerical superiority in order to finish the campaign more speedily and with a *minimum* of loss.

We should be in a good condition for this if we opposed to the 160,000 men of the Servian field army, 240,000 men, that is 6 Army Corps, comprising 12 divisions. If we add 60,000 troops for the lines of communication, which could be improvised formations, we arrive at a total of 300,000 men.

Montenegro only numbers 247,000 men. But as the war would only be finished after the complete occupation of the country, it is necessary to take into calculation all the population capable of bearing arms, that is, from 40,000 to 50,000 men. Owing to the difficult nature of the country, it would be necessary to employ 100,000 troops of the first line. It would be necessary, in case of mobilisation of a part of the army, to call out the reservists in order to replace at any moment the sick and wounded, so as not to diminish the peace garrisons. However, as the resulting cost would be a small affair compared with the expenses of the field army, it need not be taken into consideration. We will calculate, then, the expenses for an effective force of 400,000 men. It is more difficult to give an idea of the probable length of the war.

Austria-Hungary.

The most favourable contingency would be that where the Servian Army accepted a decisive battle in the open country which would allow us to utilise to the full our numerical superiority to crush it at one blow; there would then only remain desultory resistance here and there easy to overcome.

It is not at all probable that the Servians would accept such a risk. They would attempt, without doubt, to dispute the ground foot by foot, while avoiding exposing themselves to a complete and decisive defeat.

But even in this unfavourable case, as the theatre of war is small, and as our numerical superiority and the nature of the country permit us to act concentrically, one may take it that the principal resistance would be broken in two months from the date of mobilisation. We could then, after having disarmed the population, withdraw a part of the army and entrust to a special corps the work of destroying the armed bands which would, without doubt, be formed.

From 80,000 to 100,000 men might be occupied thus for four months. After these six months, it would probably only be necessary to leave a weak corps of occupation, the expense of which would not fall on the cost of the war.

The occupation of Montenegro would probably be more rapid. Nevertheless, to simplify matters, we may allow two months for the first period, after which we may allow from 20,000 to 30,000 men for a further period of four months.

In the Franco-German War, the expenses rose on the average to 6 marks (6 shillings) per man per day. But the cost of everything having increased, and in view of the special character of the war, we may allow an expenditure of 9 marks or 10·8 crowns per man per day.

But this amount does not include the assistance which would have to be rendered to the families of the reservists—assistance which would unavoidably be somewhat heavy. In order to cover this particular expense, we should have to reckon the expense per man per day at 12·50 crowns (10s. 5d.) in place of 10·80 (9s.).

The total amount, then, of what the war would cost may therefore be reckoned as follows :—

a. First Period : 400,000 men at 12·50 crowns (10s. 5d.) for two months, that is, 5 million crowns (£208,333 6s. 8d.) per day, or 300 millions (£12,500,000) for the two months.

b. Second Period : An average of 120,000 men at 12·50 crowns (10s. 5d.) for four months, that is, a million and a-half crowns (£62,500) per day, a total of 180 million crowns (£7,500,000).

This total of 480 million crowns (£20,000,000) includes all the expenses of the troops in the field, but not the pensions for the wounded, widows and orphans, nor the amount required for the renewal of the *matériel.* These last would probably amount to 100 million crowns (£4,166,666), while the pensions would probably amount to 20 million crowns (£833,333). If to the above figures are added the expenses incurred since last autumn, we arrive roughly at a round figure of 700 million crowns (£29,166,666), which could be covered by a loan at 4·5 per cent. interest, making an annual charge on the Budget of 60 million crowns (£2,500,000), part of which might later on be gradually borne by the occupied countries, although it would be impossible, owing to their poverty, to extract any war indemnity from them.

Austria-Hungary.

For a Budget which amounts to several milliards of crowns, the new charge would not prove very heavy, and could be covered by a small increase of existing taxes. The economic union of Servia and Montenegro with ourselves would also offer some compensation in commerce and industry, while, furthermore, an important result of such a war would be to establish a barrier against foreign influences in the Balkans.—*Revue Militaire Générale.*

Germany. *Important Military Appointments.*—In accordance with an Imperial Order of the 11th August, General of Cavalry von Einem has been relieved of his post as Minister of War, which he has held for six years (since 14th August, 1903), and has been appointed to the command of the VII. Army Corps at Münster in succession to General of Cavalry von Bernhardi, who has been placed on the retired list. The departure of General von Einem from the War Office is the matter of almost unanimous regret, alike in the Army and in the country, where the way he has carried out his duties has given general satisfaction. To him is due in particular the adoption of the new Q.F. field gun and the development in the employment for military purposes of automobiles and aerial navigation.

General von Einem has been succeeded as Minister of War by General of Infantry von Heeringen, Commander of the II. Army Corps (Stettin). He was born at Cassel in March, 1850, and as a Second-Lieutenant served with distinction in the war of 1870, where he won the Iron Cross of the 2nd Class, being badly wounded at the battle of Wörth. A large part of his career since has been spent on the General Staff, and he has been in command of the II. Army Corps since 24th September, 1906.

It is reported that General von Bernhardi has been relieved of his command as the result of a quarrel with the Count von Villers, at one time Commandant of the Münster Cuirassier Regiment and an Adjutant of the Kaiser, and who still remains a *persona gratissima* with him. As the result of this incident, his son, Lieut.-Colonel Graf von Villers, Commandant of the Driesen Cuirassier Regiment, has also sent in his resignation, which has been accepted, and he has been placed on the Reserve List of Officers with the rank of Colonel. General von Bernhardi is the well-known writer on military subjects, his works on cavalry having a world-wide reputation, and his unexpected compulsory retirement, which has thus prematurely deprived the Army, the country, and the Emperor of the services of one of the most eminent and most universally appreciated Generals, has excited considerable comment in Germany.

General Field-Marshal von Hahnke has been relieved, at his own request, of his duties as Commandant of the Mark of Brandenburg and Governor of Berlin, and been placed *zur disposition*, although his name will still be allowed to appear on the active list of general officers. He is succeeded by General of Infantry von Kessel, who for the last six years has been in command of the Guard Corps. General of Infantry von Loewenfeld, Commander of the X. Army Corps (Hannover), succeeds to the command of the Guard Corps.

Finally, Lieut.-General Emmich, Commandant of the 10th Division at Posen, is promoted to General and appointed to the vacant command of the X. Corps. General Emmich was born in 1848, entered the army in

1866, and received his commission as Lieutenant in 1868. He is one of the very few officers who has risen to the command of an Army Corps, without having passed through the War Academy or having served on the Staff.

Experimental Firing at Balloons.—Some interesting rifle shooting experiments at captive balloons have recently been carried out. The first experiment took place at the rifle range, Jüterborg, near Berlin, against a small balloon some forty feet long, similar to those used for carrying the automatic apparatus employed for registering atmospheric variations. It is a pity, for the purposes of the experiment, that a car was not attached to it, in which dummy aeronauts could have been placed. The firing was first carried out by the depôt company, and then by the machine gun instructional company of the Musketry School. The wind was sufficiently variable and strong enough to keep the balloon on the move, so that it offered a shifting target to the firers. The distance was 1,250 yards, taken by the range-finder.

The depôt company first fired in five minutes some 4,800 rounds, the men firing sometimes on the knee, sometimes sitting. As the balloon continued to soar, the machine gun company took their turn at firing at it, firing 2,700 rounds in two minutes and a half; but they were no more successful than the others in bringing it down. When it was brought to the ground it was seen that there were 76 hits in its envelope, although the holes made allowed very little gas to escape. It would seem, as the result of the experiment, a gun alone, owing to the size of its projectile, will be able to destroy balloons.

Some further experiments were carried out in July at Darmstadt, the target being a captive balloon, 66 feet by 15, with a car attached, in which were placed two dummies representing aeronauts. The balloon, which floated at a height of between 400 and 500 yards, was fired at in succession by a company of infantry, a section of two machine guns, and a light howitzer battery.

The company, at a range from about 1,200 yards, fired 5,000 rounds without apparent result; then the machine guns, at the same distance, fired 4,000 rounds without bringing the balloon down; finally, the howitzer battery, placed at a distance of 2,000 yards, smashed the balloon up in two rounds, which descended slowly, its empty torn envelope forming a parachute. Only one of the dummies was struck by a bullet and that was in the leg.

It is considered probable that had the balloon been stationary it might ultimately have been brought down, though still at an enormous expense of ammunition, and the circumstances would be far more unfavourable were the balloons free. The German military authorities have therefore decided that infantry shall fire at a balloon only if it is near enough to enable them to hit the occupants of the car, and that the task of destroying the balloon itself or of rendering it incapable of proceeding shall be left to the artillery.

Types of Wheels to be Used for Heavy Weight Automobiles.—According to the *Post*, at a meeting of the German Association of Automobile Manufacturers, held on the 1st July of this year, at which representatives of the Minister of War and the communication troops were present, an

Germany.

important decision was arrived at, with regard to the dimensions of certain parts of heavy-weight automobiles.

After prolonged deliberations, an agreement was arrived at between the Automobile Manufacturers and the Indiarubber firms on the subject of the size of the wheels and the tyres to be employed for the future. In conformity with the proposals of the military authorities, the size of the wheels for the heavy-weight automobiles for four tons (a serviceable weight) constructed in Germany will be as follows:—

Fore wheels:—Rim to have an exterior diameter of 670 mm. (26·3 inches) and 120 mm. (4·6 inches) gauge. Hind wheels:—Rim, 850 mm. (33·4 inches), exterior diameter and gauge (double), of 140 mm. (5·3 inches). The total height of the wheels with the tyre will be:—Front, 830 mm. (32·7 inches); hind, 1,030 mm. (40·4 inches). The fixing of the tyre on the wheel by means of a groove was unanimously adopted.

The advantage to the military authorities of this decision will be great, as the wheels of the different vehicles required on mobilisation will now be interchangeable. Some other important questions relating to the subsidised cars were also discussed at the same meeting.—*Revue Militaire des Armées Etrangères* and *Revue de Cavalerie.*

Roumania.

The Superior School of War.—The Instructions in force at present fix the following general conditions which officers have to fulfil for admission to the School of War:—Candidates must be of the rank of either captain or lieutenant, under 35 years of age, with two years of active service in their grade, well reported on, of irreproachable conduct, of a robust constitution, with good general and military knowledge, and fit from every point of view to follow profitably the courses at the School.

Up to the present, candidates have undergone an entrance examination—set papers, *vivâ voce* and practical—bearing on the principal military branches, such as topography, geography and military history. For the future candidates will have to undergo a preparatory examination in their Army Corps.

This preparatory examination can be passed by officers either at their own request or on the suggestion of their Commanding Officer. In either one case or the other the application must be supported by documents showing that the officers are really conspicuous for their education, their character, their method of carrying out their duty, their capacity for work, and their energy.

The commanders of Corps forward at the same time to the Minister of War (General Staff), as the names of the proposed candidates, the certificates of birth, etc., a medical certificate, and a report on their financial position. According to these documents the Committee of the General Staff[1] prepares the list of the officers approved to go up for the entrance examination.

---

[1] This Committee is composed of the Chief of the General Staff and his second, the heads of the two sections of the General Staff, the Director of the Military Survey Institute, and the Commandant of the School of War.

Roumania.

The preparatory examination includes themes on tactics, military history and geography, fortification, artillery and target practice.

The definite admission examination embraces general history, the regulations for the three arms, the organisation of the army and military law; it includes, in addition, the solution of a tactical theme in the field, a topographical sketch, and an equitation test. The set papers are the same for all the candidates.

The questions are prepared by the examination committee of the School of War, and approved by the Chief of the General Staff. This committee examines and gives marks for the set papers of the preparatory examination. The definite examination takes place before a special commission, who not only determine the theoretical knowledge of the candidates, their judgment, and their aptitude of decision, but also if they know how to apply their theoretical knowledge to a concrete case, treat it logically, and express their ideas easily.

La France Militaire draws special attention to what it considers the two essential points of the new instructions. The first is that it is the Committee of the General Staff which decides the question as to the admission of candidates to the examination. That measure is logical, says the journal, since the principal object of the school is to provide recruits for the General Staff, and is the more to be commended since the list of candidates is decided by a body interested in obtaining good recruits for the Staff. The second point is the existence of a practical tactical test in the field, which allows of a sounder opinion being formed as to the capabilities of the candidates than is possible from a mere paper examination.

Reorganisation of the Artillery.—We have already recorded that under this year's Budget the number of field artillery regiments has been raised from 13 to 18, grouped in 9 brigades of 2 regiments in the proportion of one brigade per division. Some further details are now available.

The 18 field artillery regiments are made up of 75 mounted batteries, 24 *cadre* batteries, 5 howitzer batteries, and 1 mountain battery, which are divided as follows:—6 regiments of 4 mounted batteries each and 2 *cadre* batteries; 4 regiments of 4 mounted batteries; 1 *cadre* battery and 1 howitzer battery; 3 regiments of 5 mounted batteries and 1 *cadre* battery; 4 regiments of 4 mounted batteries and 1 *cadre* battery; 1 regiment of 4 mounted batteries, 1 *cadre* battery, 1 howitzer battery, and 1 mountain battery.

There are, in addition and independent, groups of horse artillery.

The batteries are armed with 4 Krupp Q.F. guns.

The *Independence Roumaine* further states that next year's Budget will provide for the creation of a so-called "communications" company, whose duty will be to study and apply all the modern technical inventions which can be used in the field. It will include, in addition to the Balloon Section, which will be attached to it, 5 other special sections, viz., wireless telegraphy, searchlights, automobiles, photography and carrier pigeons.

The work of this company will be superintended by technical officers of all arms who have made a special study of these subjects. We may also note that great facilities are now granted to Roumanian officers to follow technical courses of instruction abroad and to study foreign languages.—*Bulletin de la Presse et de la Bibliographie Militaires.*

CORRESPONDENCE.

HOW TO VISIT THE PENINSULAR BATTLE-FIELDS OF 1809 TO 1812.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,

Having just returned from a visit to the Peninsular battle-fields of 1809 to 1812, of which the coming centenaries will be regarded with interest by soldiers at any rate, and probably by many others, it occurred to me that a few notes as to how best to see them might be of help to others who, like myself, do not know either Spanish or Portuguese, and who might be deterred by their want of knowledge of these languages from visiting out-of-the-way parts of Spain and Portugal.

It will be remembered that in consequence of the Convention of Cintra in 1808, Sir Arthur Wellesley returned to England, but that after Sir John Moore's retreat to Coruña he was sent out again in April, 1809 to command the British forces in Portugal, in hopes of driving out the French. In May, 1809 the passage of the Douro was forced at Oporto, and Soult was driven out of Portugal. Joseph and Victor were defeated at Talavera in July.

Massena entered Portugal in September, 1810, with 70,000 men, but suffered a sharp reverse at Busaco, and the reoccupation of the Portuguese capital by the French was prevented by the lines of Torres Vedras.

Retreating from his position facing the lines in March, 1811, covered by Ney in a series of brilliant rear guard actions, Massena made a last effort at Fuentes d'Oñoro in May, but was driven out of Portugal, repassing the frontier with only 45,000 men. Almeida was cleverly evacuated by Brennier. In the south, Elvas passed into our hands, and the battle of Albuera was fought to cover the investment of Badajos by Beresford.

Massena was superseded by Marmont, whose advance to relieve Ciudad Rodrigo, invested by Wellesley, in September, was checked at El Bodon.

In 1812 Ciudad Rodrigo and Badajos, the great frontier fortresses guarding the two main roads from Portugal into Spain, were captured by assault in January and March respectively, and in July Marmont's 40,000 men were badly beaten at Salamanca in forty minutes.

There are many lessons to be learnt on the ground which no study even of Napier can bring home, and it is interesting to note how Wellington's confidence in his own judgment seems to increase after each success in any particular branch of the military art, the culminating point, as far as the period 1809 to 1812 is concerned, being the confidence with which he manœuvred against Marmont in the Salamanca campaign, hoping his adversary might make some mistake, and the consummate skill with which he moved his troops the instant the opportunity came.

In turn each of Napoleon's successful war-tried marshals pitted against him fell before the great Englishman, at whose hands Napoleon himself suffered defeat at Waterloo in 1815.

The best time to select for the trip is after Christmas, and for choice the month of February. Military training has hardly begun, the shooting season is over, and of late years frost and fog have interfered with hunting, and it is early for fishing. The climate of England in February and March is not at its best, whereas the weather in Portugal is lovely, and the climate is most beneficial to anyone who has suffered in throat or lungs during the winter in England. Should time be no object, the Booth Line, starting from Liverpool, is perhaps the best, as it gives more time for seeing the ports, including Coruña. The address of the company is 30, James Street, Liverpool, and the steamers leave Liverpool about three times each month. If, however, the holiday cannot be extended over a month in the Peninsula, the best plan is to go by a boat of the Royal Mail Steamship Company (address 32, Cockspur Street, S.W.) direct to Lisbon, the best centre from which to start on your tours.

A special train takes passengers down from Waterloo, and the boats leave Southampton alternate Fridays, reaching Lisbon the following Monday, and returning from Lisbon alternate Wednesdays. At Lisbon the best hotel at which to put up is the Avenida Palace, as it has the advantage of adjoining the railway station (Rocio). It is as good as, and only slightly more expensive than, the Bragança on the high ground, or the Central on the Tagus. Cabs in Lisbon are very expensive, especially with luggage.

The coinage in Spain is in pesetas—about 28 to the sovereign. In Portugal it is in milreis—about 5,400 reis to the sovereign. A peseta is, therefore, worth rather less than a franc, and a 500 reis coin equals in value about two shillings of English money. Sovereigns are a convenient form of carrying money; but Messrs. T. Cook & Son (50, Rue Aurea, Lisbon) will accept a cheque for tickets. Expenses come to about £1 a day, including carriages, the charge for which is about sixpence a mile in the country; but an arrangement must always be come to before starting. In Lisbon itself trams convey you everywhere, as well as to the environs.

As regards books, though nothing comes up to Napier's "Peninsular War" and the sixth volume of the "Cambridge History," by Professor Oman, for all practical purposes Vol. I. of Sir Herbert Maxwell's "Life of Wellington" gives all the information necessary, except that there is no sketch of Albuera. The sketch of Busaco is apt to be misleading, as it does not show the three miles of ground on the right of the position, where Leith and Hill were at daybreak. The scale is omitted from the sketch of El Bodon, and there are a few places named in the text which do not appear in the maps. I would suggest taking all the books on the Peninsular War you can lay your hands on. They are always welcome in the train or in the evenings. Personally I carried in my pocket the small edition of Napier's "English Battles and Sieges in the Peninsula," extracted from the larger work, and published by John Murray, Albemarle Street, S.W. For use on the ground, I unpasted day by day the maps and sketches from Maxwell's "Life of Wellington," and put them in my pocket for reference, as the small edition of Napier has no maps.

For luggage, when travelling in Spain or Portugal, only take what will go in the railway or other carriage with you. In addition to a small bag or portmanteau and a dressing bag, take a small basket such as ladies carry their wool or work in, a rug, and umbrella, and of course field glasses or telescope. Shooting boots are an essential, and either breeches or knickerbockers. Anything more required should be taken out and left in a separate trunk at the Avenida Hotel during tours. Clothes should be such as would be worn in England in February, but of rather lighter texture.

The wine of the country—collares—is cheap and good, and unless a flask is carried it is advisable always to have some of this, as well as some cold food in the above-named basket. The basket is easily carried, and when empty can be slung on the field glass straps.

Foreign "Bradshaw," pp. 298-301, gives all the trains necessary.

The Spaniards are more "stand-off" than the Portuguese, but the natives of both countries are most willing to make things easy for an "Inglese." A few words of Spanish go a long way, and French is often helpful in Portugal. Almost the only two words of everyday occurrence to which French or Latin would give no clue are "jantar" (Portuguese for dinner), and "mantechilla" (butter in Spanish).

The peasants have very good manners, and the lifting of the cap and "N'Dios," the equivalent of our "Good morning," should be returned. When taking off one's hat, the addition of the word "Señorita" seems to establish friendly relations at once, whatever may be the age or appearance of the recipient of the courtesy.

When visiting a fortress, it is politic to call on the Commandant to ask permission to see the place, but it is not necessary as there are no guards or guns or modern works.

Some of the sanitary arrangements are very primitive, especially in the fortresses, where there are no drains; but everywhere there are clean sheets and electric light and bells. The Palace Hotel at Luso-Bussaco is charmingly situated, close to the scene of Crawford's charge at the head of the Light Division, and is most comfortable and up-to-date. Breakfast everywhere is 12 to 1, and dinner in Portugal at 7 p.m., and in Spain at 8 p.m. Everyone seems to expect tips, but that peculiarity is not confined to Spain and Portugal.

Allowing four days for the sea journey to and from Lisbon, the best way to spend the remaining time by tours would be as follows :—

First tour—Lisbon, depart 7.30 a.m.; Torres Vedras, arrive 9.17 a.m.

The Hotel Natividade is close to the station. The old lines are quite easy to distinguish, with forts on the commanding heights and the ground scarped in front. All lines are traced so as to bring flanking fire across the front of works on their right or left.

A carriage can be procured here to drive to Vimeiro (8 miles). The course of the fight of 21st August, 1808, can readily be followed once Vimeiro, in the defence of which the 50th Regiment earned such a high enconium for steadiness, is located. The ravine in front of the left of the British position, where Brennier was taken prisoner whilst trying to turn the British left, serves as an object lesson as to what effect even small obstacles may have on the course of an action.

Second day.—Return to Lisbon after staying one night.

Torres Vedras, depart 3.37 p.m.; Lisbon arrive, 6.53 p.m.

Third day.—Lisbon, depart 10.25 a.m.; Alhandra, arrive 11.21 a.m.

On walking up to the monument on the nearest spur, the right flank of the 1st and 2nd lines, which met at Alhandra, can be plainly made out, and the day is spent in inspecting the various works: Alhandra depart 6.16 p.m.; Lisbon arriving 7.18 p.m.

The 3rd lines were round Fort S. Julian, to which trains go every half hour from another station, the Caes de Sodre, close to the fish market, which is well worth a visit. The station for Fort St. Julian is St. Amaro. There are frequent trains to Cintra from Rocio Station, which adjoins the Avenida Palace Hotel.

The Cathedral and the church of S. Vicente, where the bodies of the Sovereigns of Portugal are embalmed, including those of the late King and Crown Prince, which can be seen through glass, can both be visited by the Graço tram, and the tower and cloisters of Belem can be reached by the Belem tram. Both trams pass close in front of the hotel.

Second tour.—Ask the hotel porter to write to "Il Proprietario, Hotel del Commercio, Salamanca, España," to reserve rooms and send to meet train first evening; and the same to "Señor A. Salgado, Fonde Salgado, Ciudad Rodrigo, España," for the third afternoon.

First day—Lisbon, depart 9.45 a.m.; Salamanca, arrive 10.50 p.m.

The train passes along the route of Massena's retreat, covered by Ney's rear guard, in 1811: Pombal on 10th March; Redinha, 12th; Condeixa, 13th; Celorico, 21st; and Guarda, 28th. They can all be seen in daylight.

Second day.—*Salamanca.* Hire a conveyance and drive across the bridge over the Tormes, and take the left-hand road to the Arapiles. This road passes behind the British first position on 22nd July, 1812, the right of which ended just short of the Arapiles. From the top of the British Arapiles the whole course of the battle can be seen, except the line of the French retreat towards Alba de Tormes, which is best seen from the French Arapiles. Drive back through the village of Arapiles and over the line of Pakenham's attack on the head of Thomiere's Brigade. What a splendid effort Clausel must have made to retrieve the situation after Marmont was wounded.

On arrival at the bridge on the return journey, get out and look at the ruins of the fortifications of the convents which barred the British advance in May, 1812, and then walk out and see the positions taken up to defend Salamanca from the north.

Third day.—Salamanca, depart 11.25 a.m.; Ciudad Rodrigo, arrive 1.22 p.m.

Ciudad Rodrigo.—The main breach is still bare, as the masonry was never replaced. It is in the north-west corner, where stands the Cathedral, still bearing marks of the battering received in January, 1812. There is also in this corner a monument to General Herrasti, the brave defender against the French in June and July, 1810.

There is no difficulty in recognising the Great and Little Teson from the retrenchment on the rampart behind the main breach; but the Convent of Santa Cruz no longer exists, and that of S. Francisco, whence the Light Division started for the assault of the Salamanca gate and the lesser breach, in which Crawford was killed, is in ruins.

Marmont had left too small a garrison, and made no real effort to relieve the place, little thinking the ordinary rules of war would be disregarded. The result was that all his battering train, 150 guns and 1,700 good troops were lost to him for the remainder of the campaign. A Spanish engineer officer, by name Captain Unciti, told me he had been to considerable pains to try and make out the exact positions of the parallels and approaches, and that, considering the fact that there was no corps of engineers then, and the tools supplied were indifferent, the work done appears to have been up to a high standard of merit.

The old gentleman who owns the inn at Ciudad Rodrigo, Señor Salgado, is a typical courteous Spaniard, but he doesn't know a word of any language but his own. Captain Ricardo Unciti, however, who is writing a history of the siege, lives in Ciudad Rodrigo, and knows French fairly well. He told me it would always be a pleasure to assist any British officers who wished to see Ciudad and its neighbourhood, and he is a friend of Señor Salgado.

Fourth day.—Ciudad Rodrigo, depart 8.10 a.m.; Fuentes d'Oñoro, arrive 9.24 a.m.

Fuentes d'Oñoro.—A good view of the lie of the ground between the Duas Casas and Tormes streams can be obtained from the hill Nava d'Aver, occupied by Julian Sanchez and his guerillas at the beginning of the battle of 5th May, 1811. The danger to which Wellington was exposed when the hill was abandoned must have been great. The hill overlooks the scene of Norman Ramsay's dash for freedom with his Horse Artillery Battery when the 7th Division was so hardly pressed by Montbrun in the low, swampy ground near the source of the Duas Casas. Then walk back to Fuentes Station by Poço Velho and Villar Formoso. Villar Formoso is the Portuguese frontier station, Fuentes the Spanish, and they are half a mile apart. The international agent at Fuentes Station is very helpful.

Fuentes d'Oñoro, depart 5.20 p.m.; Ciudad Rodrigo, arrive 6.25 p.m.

Fifth day.—Ciudad Rodrigo, depart 8.10 a.m.; Villar Formoso, arrive 9.27 a.m.

Hire a carriage to drive to Almeida (9 miles), see the fortress (a model of what a fortress should have been 100 years ago), and Crawford's position on the Coa, when he was supposed to have imperilled the existence of the Light Division by refusing to retire when Massena advanced to invest Almeida after capturing Ciudad Rodrigo on the 11th July, 1811. Crawford's left rested on a rocky height about 800 yards from Almeida. Drive back and walk from Villar Formoso to

Fuentes d'Oñoro, depart 5.20 p.m.; Ciudad Rodrigo, arrive 6.25 p.m.

Sixth day.—Hire a carriage so as to leave at 8.30 a.m., and drive to El Bodon, and see the ground over which the 11th (The Cherubims) repeatedly charged about 4,000 of Montbrun's cavalry as they reached the top of the slope with blown horses, also the line of retreat of the square composed of the 5th and 77th, after they had charged the French cavalry with the bayonet.

Seventh day.—Ciudad Rodrigo, depart 1.22 p.m.; Luso-Bussaco, arrive 6.31 p.m.

Write to the Palace Hotel, Luso-Bussaco, a day or two before, and ask the manager to send the motor for you to the railway station.

Eighth day.—Start from the hotel at 8 a.m. and walk to the chapel, just outside the park wall, and see the plan of the battle-field; then climb up the hill, leaving the Anglo-Lusitanian monument on your right, and follow the Bussaco Park wall to the top of the hill—a climb of 500 feet — General Spencer's position. Walk southwards along the top of the Sierra, and return as far as the lowest part of the range, where Reyniers' attack was made on the north side of the trail from S. Antonio, when first the 88th and 45th, and then the 9th, made such gallant charges against the heroes of Austerlitz.

From the spot where Wellington placed Thompson's guns to rake Merle's Brigade, which was afterwards reached by Foy's Brigade, there is a good path almost on the level all the way back to the Lusitanian monument, which saves a stiff climb and brings you out close to Crawford's right, where Marchand's Division attacked; and a little further on, round the spur, is the crest from which the 43rd and 82nd launched their famous charge on Ney's right division under Lorsin.

The gradient of the road up the spur has been altered, and it takes some little time to fix on the exact spot, but the deep ravine which separated the attacks of Ney's two divisions serves as a guide.

This is rather a long day if you go far enough in the morning to overlook the Mondego and the Murcella position on the left bank of the Mondego; but the hotel is on the spur defended by the Light Division, so once back there your day is ended.

Ninth day.—Leave the Palace Hotel in a motor at 9 a.m. and motor to Pampilhosa, depart 9.53 a.m.; Oporto, arrive 1.51 p.m. Write on to the Hotel d'Oporto as usual.

Cross the footbridge and go up to the Convent on the height of Serra, where Wellington stood on the 12th May, 1809; you can see everything from there.

Tenth day.—Oporto, depart 5 p.m.; Lisbon, arrive 10.50 p.m.

Third tour.—Lisbon, depart 10.25 a.m. (change at Torre Das Vargens 4.2 p.m.); Badajos, arrive 7.25 p.m.

Get the hall porter at the Avenida to write to Señor A. Vallejo de Mercado, Hotel de Paris, Badajos, as usual. There is an intelligent waiter there who understands a few words of French.

Badajos.—Second day.—First cross the Agueda by the bridge and climb up to Fort Christoval, as from there you command a good general view. Then return and walk round the ramparts and castle, and finally go out to the Picurina by the Trinidad Gate and St. Roque, and work your way to the great breach in the Trinidad bastion. There is an inscription on the spot where the great breach was, cut into the stone (1812), with cannon balls let in round it.

According to Napier and Maxwell, the Santa Maria and Trinidad bastions are next to one another, and this makes the narrative rather hard to follow, as according to the Spanish plans of 1811 and 1812, the St. Roque bastion is between the Santa Maria and Trinidad bastions, which appears to show there was some mistake in the orders which led to the confusion in the assault of the Light Division under General Barnard on the 6th January, 1812. Whether there was any misunderstanding or not, a view of the position of the breach gives one food for thought as to whether European soldiers of to-day have the magnificent fighting qualities displayed by both sides on that memorable occasion.

Albuera.—Third day.—Drive to Albuera (14 miles) and put up there. After seeing the bridge where Godinot's Brigade made the false attack, take the new road to Valverde, which follows the valley of the Feria stream, having on your left (and on the other side of the stream) the wooded height, behind which Soult massed his troops to turn Beresford's right. In about two miles you reach the undulations in the ground whence the Fusilier Brigade (7th and 23rd) drove the victorious French of Gerard's Corps and Werle's Brigade at the point of the bayonet on the 15th May, 1811. Next cross the valley of the Arroya val de Seville, and see where Lumley drove off the disorganised French cavalry.

Return to Albuera by the old Valverde road, which is the one shown in Napier's sketch of the field of battle.

Badajos, depart 6.5 p.m.; Elvas, arrive 7 p.m. Write to the Central Hotel, Elvas, as usual.

Elvas.—Fourth day.—See Elvas and the fortress. Elvas, depart 7 p.m.

Lisbon.—Fifth day.—Arrive 6.25 a.m.

Fourth tour.—Lisbon, depart (Mondays, Wednesdays, and Saturdays only), 7.25 p.m.; second day, Talavera, arrive 8.26 a.m.

En route you pass Abrantes, Alcantara, and Almaraz, the scene of General Hill's great exploit in May, 1812, in order to destroy the one remaining bridge by which the French armies could communicate.

The Spanish right (at Talavera) rested on the town, 28th July, 1809, and to the British left, where the fighting took place, is a short, easy walk. Return same evening to Lisbon, 11.56 p.m.

Should time be available, Talavera, depart 4.38 p.m.; Madrid, arrive 8.37 p.m., visiting the scenes of the battles of 1813 and 1814, Burgos, Vittoria, St. Sebastian, Pyrenees, Nive, Nivelles, Bayonne, and Bordeaux, on the way home by rail.

Thus, if a month can be spared in the Peninsula, almost the whole of the battle-fields can be visited. If, however, only a month altogether is available, the Talavera and northern ground must be omitted, as between arriving at Lisbon on the Monday morning and leaving on the Wednesday fortnight about 2 p.m., only fifteen clear days can be counted on. In order to put in those fifteen days to the best advantage, I would suggest :—

1. Seeing Vimeiro the same day as Torres Vedras.
2. Leaving out Elvas from the Badajos tour.
3. Driving to Almeida the same day as Fuentes d'Oñoro.

The expenses would come to under £40 :—

	£	s.
Journey, London and Southampton and back ...	1	3
Return ticket to Lisbon and back	12	0
Hotel and carriage expenses, at £1 per day	16	0
Tips and sundries ... ... (about)	8	0
Total	37	3

Should any officer wish for further information it will be a very great pleasure to give it if he will write to me at any time to Sprotborough Hall, Doncaster.

A. BEWICKE-COPLEY,

Brig.-General.

NAVAL AND MILITARY CALENDAR.

SEPTEMBER, 1909.

6th	(M.)	H.M.S. *Flora* paid off at Colombo.
,,	,,	H.M.S. *Cambrian* paid off at Colombo.
7th	(T.)	H.M.S. *Flora* recommissioned at Colombo.
,,	,,	H.M.S. *Cambrian* recommissioned at Colombo.
11th	(Sat.)	Presentation of Colours to the 4th Border Regiment at Lowther Castle by Lord and Lady Lonsdale. Bicentenary of the Battle of Malplaquet (11th September, 1709).
13th	(M.)	150th Anniversary of the Capture of Quebec and death of General Wolfe.
15th	(W.)	Argyll and Sutherland Highlanders embarked at Southampton for Malta.
17th	(F.)	Attempt to salve Submarine "C 11" abandoned.
18th	(Sat.)	Presentation of Colours to the 6th Seaforth Highlanders at Elgin by the Duke of Richmond and Gordon.
24th	(F.)	1st Inniskilling Fusiliers left Malta for Tientsin in transport *Soudan*.
25th	(Sat.)	Launch of first-class battle-ship *Helgoland* from the Howaldt Yard, Kiel, for German Navy.
,,	,,	French military Airship *Rèpublique* collapsed through damage caused by breaking of propeller blade, and fell to earth from a height of 400 feet, her crew of four being instantly killed.
27th	(M.)	Spanish troops captured Zeluan, Riff stronghold in Muluya Valley.
29th	(W.)	8th Hussars left Southampton for Lucknow per transport *Dongola*.
,,	,,	Spanish troops captured Mount Gurugu, the Moors' strongest position.
30th	(Th.)	Launch of first-class battle-ship *Neptune* at Portsmouth.
,,	,,	Launch of second-class cruiser *Glasgow* from the Fairfield Shipbuilding and Engineering Yard at Glasgow.
,	,,	Launch of first-class battle-ship *Ostfriesland* from the Imperial Dockyard, Wilhelmshaven, for German Navy.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.—*Boletín del Centro Naval.* Buenos Aires: May and June, 1909.—"The First Battle Squadron." "The Italian Combined Naval and Military Manœuvres." "The Argentine Navy League."

Austria-Hungary.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 10. Pola: October, 1909.—"Deep Sea Diving." "Progress in Artillery Matters, 1908-09." "The Statement of the French Minister of Marine on the Supplementary Credits for 1909." "German Naval Estimates for 1909." "The Behaviour of the Various Types of Boilers during the Cruise Round the World of the U.S. Fleet." "The French Submarine Salvage-Ship *Vulcain*."

BRAZIL.—*Revista Maritima Brazileira*. Rio de Janeiro: July, 1909.—"The Mercantile Marine." "The Japanese Navy." "Practical School of Artillery: No. 2." "Ambulances."

CHILI.—*Revista de Marina*. Valparaiso: June, 1909.—"Reform in the Matter of Projectiles and Coast Artillery" (*concluded*). "Radio-Telegraphy: Its Present State and Progress." "A Necessity." "Cordite: The Influence of Temperature on its Ballistic Qualities; the Necessity of Making Practical Experiments." "Improvements in Torpedoes." "Political and Military Study of Japan" (*continued*).

FRANCE.—*Revue Maritime*. Paris: July, 1909.—"Marine Engines." "The Dunkirk Corsairs under Louis XIV."

La Marine Française. Paris: September, 1909.—"The Enquiry into the State of the Navy" (*continued*). "What is Naval Power?" "Brest-Transatlantic." "Our Naval Arsenals." "The Food of the Seaman." "Naval Megalomania." "Veteran Seamen."

La Vie Maritime. Paris: 10th September, 1909.—"The New Organisation of the Squadrons and the Reforms." "Old Paths." "Munitions and the Firing Schools." "A New Boiler Commission." "The *Rurik* and the *Renan*." "Firing Experiments against the *Iéna* and the *Terrible*" "The Guns of the *Jules Michelet*." 25th September.—"The Raising of Pay." "Wireless Telegraphy." "Our Submarines." "New Lines for the Hulls of Ships to Ensure High Speeds." "The Firing at the *Iéna*."

Le Yacht. Paris: 4th September, 1909.—"The Gunnery Division." "Yachting Notes." "The Danish Submersible *Dykkeren*." "Physical Exercises in the Navy." 11th September.—"The Torpedo Divisions: The Flotillas." "Yachting Notes." "Naval Reforms." "The Incidents at Marseilles." "The New Destroyer *Chasseur*." 18th September.—"The Crews of the Fleet." "Yachting Notes." "The Central Torpedo Department." 25th September.—"The Genesis of Naval *Matériel*." "Yachting Notes." "The English Factory-Ship *Cyclops*." "The Prize Competition of the Flotillas."

Le Moniteur de la Flotte. Paris: 4th September, 1909.—"The Speech of the Minister of Marine at La Rochelle." "The Flotillas: The New Fleet." 11th September.—"The Gunners-Fusiliers." "The Inspector-Generals." "Automatic Torpedoes." "Triple Turrets." 18th September.—"The Practice of Navigation: Approaching Cruises of Training Ships." "The Grand Councils." "The Navy in Parliament." "The Reorganisation of the Administrative and Technical *Personnel*." 25th September.—"The Question of Premiums." "The Consultative Organs of the Navy." "The Central Administration." "The Navy in Parliament." "The Torpedo Schools."

GERMANY.—*Marine Rundschau*. Berlin: October, 1909.—"Trans-Continental Railways and Trans-Continental Railway Projects." "Speculations on the Possibility of Paying Airship Lines of Communication, with Regard to the Special Practicability of an Airship Traffic over the Atlantic from the Aerological and Seamanship Standpoint." "The English Naval Manœuvres, June-July, 1909." "Tsushima in French Eyes." "The Importance of the Sleeping Sickness for Our Colonies." "China, Japan, Korea and Manchuria."

Italy.—*Rivista Marittima.* Rome: July-August, 1909.—"Battleships." "The Action of the Fleet in 1859." "Une Nouvelle Droite de Hauteur." "Hydraulic or Electrical Gun Installations." "Internal Ballistics."

Portugal.—*Revista Portugueza, Colonial e Maritima.* Lisbon: August, 1909.—Has not been received.

Annaes do Club Militar Naval. Lisbon: August, 1909.—"Some Considerations on the Report of the Enquiry into the State of the French Navy, with Reference to the B. Powder." "Instruction and Education of the Junior *Personnel* of the Fleet." "Fire Direction." "The War in Guinea."

Spain.—*Revista General de Marina.* Madrid: September, 1909.—"The London Naval Conference." "The Portuguese Navy." "The Question of Cruisers." "The Life of Heavy Guns." "Notes on Coast Defence in Germany."

United States.—*United States Naval Institute Proceedings.* No. 3. Annapolis: September, 1909.—"Another View of Alma Mater." "The Monroe Doctrine: Its Meaning and Application at the Present Day." "The Major Elements of War Efficiency." "The Cruise of the *Clarence-Tacony-Archer.*" "American Admirals in the British Navy." "The Nitrogen Question from the Military Standpoint." "Some Notes on Parsons Turbine Construction." "The Selection of the West Indian Naval Base." "On the Approximate *Formulæ* for Areas and Volumes, and their Comparative Accuracy." "Voice Pipes." "An Enumeration and Short Account of Names of Men-of-war during the Early United States Naval History." "Main Engine Repairs under way." "A Study of Naval Strategy."

MILITARY.

Austria-Hungary.—*Danzer's Armee-Zeitung.* Vienna: 2nd September, 1909.—"Aims and Methods of a Great Balkan Policy." "Studies for a New Statute." "Crete." "Lieut.-General Graf Jellachich." "The Taking Over of Command." "Abstract of Foreign Manœuvres, 1909." 16th September.—"Thirty Years of Austro-German Alliance." "The Constitution for Bosnia." "The Kaiser-Manœuvres in Moravia." 23rd September.—"The Development of the Empire's Crisis." "The Kaiser-Manœuvres in Moravia" (*continued*). 30th September. — "The Kaiser-Manœuvres in Moravia" (*concluded*).

Streffleurs Militärische Zeitschrift. Vienna: September, 1909.—"The First Field-Manœuvres of the Emperor Joseph II. in Bohemia, 1756." "Heavy Batteries and the Captive Balloon." "On the Transport of Machine Guns in Heavy Snow." "A Foundation for Developing Power of Judgment and Capacity for Coming to a Determination in Soldiers." "The Misuse of Alcohol: Its Effects and its Combating in Peace and War."

Kavalleristiche Monatshefte. Vienna: September, 1909.—"The Cavalry at Aspern and Wagram." "Letters on the "German Cavalry

Regulations.' '' "A French Cavalry General." "Battle Scouting." "Winter Work." "Machine Gun Squadrons." "A Proposal for Combating Horse Murrain." "Tactical Problems for Cavalry Officers."

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th August, 1909.—"Manœuvre Regulations for the German Army (22nd March, 1908)" (*continued*). "The Cavalry Divisions at the Imperial German Manœuvres, 1908." "Reorganisation of the French Artillery." 31st August.—"Manœuvre Regulations for the German Army (22nd March, 1908)" (*continued*). "Reorganisation of the French Artillery" (*continued*). "The Cavalry Divisions at the Imperial German Manœuvres, 1908" (*continued*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st September, 1909.—"Initiative among Soldiers" (*continued*). "Critical Study of the Bill Relating to the *Cadres.*" "Studies on the Sanitary Service in the Field" (*continued.*) "Advantages and Inconveniences of the New Gymnastics." "Automobilism from the Military Point of View" (*continued*). "The Battle of Iéna." 15th September.—"Aeroplanes and Dirigibles." "War and Compulsory Service." "The Initiative among Soldiers" (*concluded*). "Promotion of Officers." "Advantages and Inconveniences of the New Gymnastics" (*continued*). "Organisation and *Encadrement* of Infantry." "Automobilism from the Military Point of View" (*concluded*).

Revue d'Infanterie. Paris: August, 1909.—"Infantry Combat: The Moral Factor." "New Firing Regulations for the Russian Army." "The New Manœuvre Regulations of the Spanish Infantry."

Revue de Cavalerie. Paris: August, 1909.—"General de Gallifet, Grand Master of the French Cavalry." "Our Cavalry in the Next War (General von Bernhardi)." "A Cavalryman at the Army Manœuvres, 1908." "Seydlitz" (*continued*). "Contradictions." "The Cavalry Manœuvres, 1909."

Revue d'Artillerie. Paris: July, 1909.—"The Flight of Birds, Form of the Wings, and Aeroplanes." "English Opinions on the Communications between the Different Arms." "The Practice of Covered or Semi-Covered Artillery Positions." "Photographic Observation Service from Balloons."

Revue Militaire Général. Paris: August, 1909.—"Methods of Communication." "The Brigade of Goltz at Borny." "Positions and Fortresses." "Study on the Period from the 5th to the 14th June in the Campaign of 1807" (*concluded*). "The Covering Detachment in Mountains."

Le Spectateur Militaire. Paris: 1st September, 1909.—"Souvenirs of an Officer of the 13th of the Line" (*concluded*). "Principles which should Serve as a Base for the Organisation Laws" (*continued*). "Manœuvring in Woody Country" (*continued*). "The Letters of Major Kretschman" (*continued*). 15th September.—"Strategical Considerations on the Italian Campaign, 1800." "Principles which should Serve as a Base for the Organisation Laws" (*continued*). "Manœuvring in Woody Country" (*continued*). "Letters of Major Kretschman" (*continued*).

Revue d'Histoire. Paris: September, 1909.—"A Guerilla Leader in 1800." "The Campaign of 1813: The Preliminaries." "The Causes of the Austrian Defeat in 1866" (*concluded*). "The Mitrailleuse in 1870" (*continued*). "The War of 1870-71 : The National Defence in the Provinces" (*continued*). "Unpublished Letters of Napoleon I." (*continued*).

Revue Militaire des Armées Etrangères. Paris : September, 1909.—"The U.S. Army in 1909." "The Budget of the German Army for 1909" (*continued*). "The New Manœuvre Regulations for the German Cavalry" (*concluded*).

GERMANY.—*Militär-Wochenblatt.* Berlin: 2nd September, 1909.—"To the Umpire, M.O., 89-106." "The Fight for Universal Service in England." "A *Landwehr* Exercise in Italy." 4th September.—"The Defence of the Railway Redoubts of Hantschenpu at the Battle of Mukden" (*continued*). "To the Umpire, M.O., 89-106" (*continued*). "Training of Reserve Officers for Service with Signal Detachments." "The French Field Gun in the Night Action of Bon-Denib (1st September, 1908." 7th September.—"Importance of the Somme for the Germans in the Time between the Battles on the Hallue and at St. Quentin." "Militia-Cavalry and Two Years' Service." "To the Umpire, M.O., 89-106" (*concluded*). "Minister of War Haldane on the Position of Military Airships in England." 9th September.—"The Battle in the Teutoburg Wood, 9th-11th September, in the Year 9." "The Revision of the Officers' Grade in Turkey." "Titles in the Turkish Army and the Different Military Ranks." 11th September.—"The Battle of Malplaquet, 11th September, 1709." "Stabbing or Cutting Weapons." "The New Roumanian Infantry Drill Regulations." "The Independence of the Soldier." 14th September.—"On the History of the Prussian Artillery." "The Battle of Malplaquet" (*concluded*). "The Position of Retired Officers in Italy." 16th September.—"Two Hundred and Fifty Years Ago." "The Spanish War in Morocco" (*continued*). "The Danish National Defence Questions." "A Letter of Pertev Pasha." 18th September.—"Kriegerisches und Friedliches aus dem Feldzügen con, 1864, 1866, 1870-71, by H. v. Müller." "The British Empire Defence Conference." "The Netherlands Army." Extra Edition.—"The British Empire Defence Conference" (*concluded*). "The Chilian Army." 21st September.—"What the Fighting round Port Arthur has Taught us in Regard to Coast Fortifications?" "The Bulgarian Army." 23rd September.—"What the Fighting round Port Arthur has Taught us in Regard to Coast Fortifications?" (*continued*). "The Independence of the Soldier." "Wright's Flight." 25th September.—"Napoleon I.'s Means of Communication" (*continued*). "What the Fighting round Port Arthur has Taught us in Regard to Coast Fortifications?" (*continued*). "Firing Competitions and the Army." 28th September.—"The Commanding Generals of the German Army from 1889 to 1909" (*continued*). "Napoleon I.'s Means of Communication" (*continued*). "The French Field Sanitary Service." 30th September.—"The Army Leading of Napoleon in its Importance for Our Own Time." "Casualty Flags." "New Organisation of the Russian General Staff College."

Artilleristiche Monatshefte. Berlin : September, 1909.—"The Report of the Military Commission on the Reorganisation of the French Artillery." "Fire Direction for the Field Artillery." "The New Austro-Hungarian Field Artillery Organisation and Regulation." "Practice against Airships." "The Field Artillery Schools." "Cover for the Field Artillery according to the Russian Field Fortification Regulations.

Jahrbücher für die Deutsche Armee und Marine. Berlin : September, 1909.—"A French Comparison between the Kaiser Manœuvres and the Manœuvres of the Centre, 1908." "Not Fire Superiority but Fire Attack." "A Decision of the Imperial High Court on the Military Pension Law." "The Construction of French Fortifications during the Last Ten Years." "The Development of the Battleship." "The Education of the Soldier."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: June, 1909.—"The Siege Goniometer and Dial Sight." "Notes on the Structure and Thickness of Bomb-Proof Cover Under Fire." "Notes on Siege and Heavy Field Artillery of Various Armies." "A Turkish Fortress : St. John of Acre." "On the Production of Steel with the Electric Furnace on the *Stassano* System." "On the Necessity of Reinstituting Training in Fieldworks in the Infantry."

July-August, 1909.—"The Jubilee of the War of Liberation at the School of Instruction of Artillery and Engineers." "General Eusebio Bava." "Practical Calculation of Cast Iron Water Conduits." "Ever Progress." "A Further Note about Switching Fire on Concealed Targets." "A New Type of Observation Wagon." "The Brinell Apparatus and its Applications." "For an Idea." "Road Trains with Exact Locking Wagons."

Rivista Militare Italiana. Rome: 16th August, 1909.—"Kassala." "Old and New Conceptions of Authority." "The Italian Army at Custozza (1866), Judged by an Austrian General." "African Matters." "The Tuscan Troops in 1859." "The Relation between Geography and History." "The Battle of St. Euphemia and the Calabrian Insurrection against the French." "National Awakening and Soldier Heroes." "Some Notes of Archduke Albert on the Battle of Solferino." "Austrian Economies and Italian Extravagance." "Statistical Notes on the Levy of the Men Born in 1887."

Rome : 16th September, 1909.—"The War Office and the Central Organs of the Army" (*concluded*). "The Graphic Solution of Problems Concerning March Orders." "The Tuscan Troops in 1859" (*concluded*). "The Battle of St. Euphemia and the Calabrian Insurrection against the French" (*concluded*). "Some Military Geographic Notes on the Territory Situated between Massowah, Asmara, Aksuma, and Adigrat." "Tripolitana." "Notes and Remarks on the Campaign of 1859." "The Fort of Fuentes." "Statistical Notes on the Levy of the Men Born in 1887."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid : 1st August, 1909.—"Military Instruction of the Troops." "Our War in Africa, Judged by a German General." "Philosophical Reflections about War and Soldiers" (*continued*). "Examination of the French Frontier" (*continued*). "The New Tactics" (*continued*). "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School" (*continued*). "Educators of Armies : In Germany." 15th August.—"Our War in Africa, Judged by a German General" (*concluded*). "Philosophical Reflections about War and Soldiers" (*concluded*). "Examination of the French Frontier" (*concluded*). "Educators of Armies : In France" (*continued*). "The New Tactics" (*concluded*). "Report on the Musketry

Course by Infantry First-Lieutenants at the Central Musketry School" (*continued*). "A Grand Diplomatic Soldier."

Revista Científico- Militar y Bibliotéca Militar. Barcelona: 1st September, 1909.—"The Operations at Melilla." "Regulations for the War in North Africa." "Infantry Attack Formations from the Artillery Point of View" (*concluded*). "Pay in the German Army." "Rifle Firing at Balloons." 25th September.—"The Operations from the 1st to the 15th September." "Hand Grenades." "Spain in Morocco."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: September, 1909.—"The Swiss in Italy" (*continued*). "The Light Field-Howitzer and Flat Trajectory Firing." "Mobile Field Kitchens." "The Manœuvre and Battle Regulations of the Roumanian Infantry." "Sheer Line Bridges."

NOTICES OF BOOKS.

A Vindication of Warren Hastings. By G. W. HASTINGS. London: Henry Frowde. 1909.

It is undeniable that in spite of all the efforts of the admirers of Warren Hastings to clear his memory from the aspersions cast upon him during his state trial by Burke, Francis, and Sheridan, the reputation of Hastings still remains unjustly tarnished. Burke and Francis are now but shadows, and Sheridan is nearly forgotten, or remembered chiefly as the brilliant dramatist of a century ago, but their slanders on Hastings, though refuted almost as soon as uttered, having unhappily been endorsed and repeated by Mill, in his history of India, and by Lord Macaulay in the famous—we had nearly written infamous—Historical Essay, have passed into the educational *matériel* of the nation.

It is therefore unfortunately the case that, even to-day, grown men and women, as well as youths and maidens, still believe the old untruths; still believe that Hastings, who died poor, wrung a great fortune from the oppressed natives of India; from those natives who, in point of fact, hailed him, in the day of his adversity, no less than in the hey-day of his power, as their best friend, their wisest adviser, and their most benevolent ruler. Young and old still believe the grotesque falsehoods of Sheridan, whose ignorance and credulity afford him some poor excuse, and their belief is, we think, almost entirely attributable to the reiteration of the charges of the prosecutors of Hastings in the magic pages of Macaulay, who certainly cannot stand excused, either by ignorance of Indian affairs or by any inability to measure plain evidence.

We need not here pause to enquire why it was that Macaulay thus deliberately perpetuated a great wrong. Suffice it to say that, as Mr. G. W. Hastings truly states, not only Englishmen, but Americans, Japanese, and, more mischievous still, Indian students of our history firmly believe to-day, on Macaulay's authority, that Warren Hastings committed great crimes against the people entrusted to his charge, and that he only escaped conviction and punishment because his judges, the Peers of Great Britain, had become weary of his prolonged trial. Yet Macaulay, who supported this perversion of history, is said, by the author of the book under review, to have expressed in a letter to Jeffrey, the editor, through whose hands the essay on Warren Hastings passed into print, the opinion that Hastings was one of the greatest, and possibly even the greatest Englishman of the eighteenth century. Such a contradiction of language is inexplicable in a writer who lays claim to the title and character of historian.

As regards Mr. G. W. Hastings' contribution to the literature associated with the name of his famous kinsman, a few extracts will, we think, best explain the intention and character of the book.

It is largely a compilation, principally founded on the two volumes of *State Papers*, edited by Mr. G. E. Forrest for the Government of India, and has been written with the object of presenting in a clear and concise form the evidence adduced by Mr. Forrest in refutation of the six principal charges brought against Hastings at his trial by the Peers.

We will take as a specimen the first charge dealt with, that regarding the Rohilla War, perhaps the darkest crime imputed to Hastings; and we will follow Macaulay's indictment by the rebutting evidence now adduced and by the author's comments.

Referring to the condition of Rohilkhand at the end of the war, Macaulay writes as follows:—"The whole country was in a blaze. More than a hundred thousand people fled from their homes to pestilential jungles, preferring famine and fever to the tyranny of him to whom an English and a Christian Government had for shameful lucre sold their substance and their blood, and the honour of their wives and daughters." Then follows Mr. Forrest's verdict on this lurid passage, worthy rather of Mr. Hall Caine than of Macaulay.

"A close and minute study of the evidence demonstrates that a certain number of the villages were burned and that the prisoners were ill-subsisted. A hundred thousand people did not fly to pestilential jungles, but about seventeen hundred or eighteen hundred Rohillas, with their families, were expelled from Rohilkhand, and Hindu inhabitants, amounting to about seven hundred thousand, remained in possession of their patrimonial acres and were seen cultivating their fields in peace."

Who can wonder at Mr. G. W. Hastings' indignant comment on Macaulay's travesty of history. "This rhetorical invective," he writes, "is the more inexcusable because the evidence correcting it has always been on record in the proceedings of the Secret Committee of the Indian Council, and Macaulay, when for five years a member of that Council, had ample opportunities to consult the authorities, and ascertain the truth for himself. He chose instead to rely on the mistakes and malignities of Francis, Burke, and Mill, without verification, and to indite thereupon, with all the wealth of his vocabulary, a hideous slander on the great founder of British India."

To this Mr. Hastings adds the testimony of Sir John Strachey, a distinguished Indian administrator, speaking from his own experience:—

"Several years of my Indian service," writes Sir John in his "Hastings and the Rohilla War," "were passed in the province of Rohilkhand. When I was first sent there old men were still living who remembered having heard in their childhood the story of Hafiz Rahmat, the great Rohilla Chief, of his defeat by the English, and his death. I went to Rohilkhand without a doubt of the truth of the terrible story told by Burke and Mill, and by Lord Macaulay in his famous essay, but I soon changed my opinion. I found myself in the midst of a population by which the history of these times had not been forgotten, and of which an important and numerous section consisted of Rohillas, the children and grandchildren of the men whose race was supposed to have been almost exterminated. I was in frequent communication with a Rohilla Prince, who ruled over a considerable territory which his ancestor owed to Warren Hastings, and which had been in the possession of his family ever since. No one had ever heard of the atrocities which to this day fill Englishmen with shame. Later in life I was able to undertake an examination of the original authorities on the Rohilla war, and I can hardly express in moderate language my indignation at the misrepresentations, the suppression of truth, the garbling of documents, of which I found that Mill had been guilty. The English army was not hired out by Hastings for the destruction of the Rohillas; the Rohillas, described by Burke as belonging to 'the bravest, the most honourable and generous nation on earth,' were no nation at all, but a comparatively small body of cruel and rapacious Afghan adventurers, who had imposed their foreign rule on an unwilling Hindu population, and the story of their destruction is fictitious."

The evidence of Sir John Strachey is conclusive, and fully justifies the indignation expressed by Mr. G. W. Hastings against Macaulay. It must be borne in mind, too, that the slanders on Warren Hastings not only wrong his illustrious memory, but are freely used to-day by those who desire to stir up in India hatred against the English rulers of that vast territory. We therefore commend Mr. G. W. Hastings' interesting and valuable book to the attention of all whose duty it is to supervise the historical education of the rising generation of England and India. They will, we trust, after a study of its pages, agree with us in the opinion that Macaulay's essay on Warren Hastings should no longer be placed in the hands of their young, impressionable, and uninformed pupils.

PRINCIPAL ADDITIONS TO LIBRARY DURING SEPTEMBER, 1909.

Trumpets and Bugle Sounds for the Army. Official. Crown 8vo. 9d. (Presented.) (Harrison & Sons.) London, 1909.

Arctic Expeditions from British and Foreign Shores from the Earliest Times to the Expedition of 1875-76. By D. Murray Smith. 4to. 40s. (M'Gready, Thomson & Niven.) Glasgow, 1877.

The Annals of the Twelfth East Suffolk Regiment. By Captain C. H. Gardiner, 12th Regiment. 8vo. (Presented.) (Free Press Works.) Bury St. Edmunds, 1908.

The Russo-Japanese War—The Battle of Liao-Yau. Prepared in the Historical Section of the German General Staff. Authorised translation by Karl von Donat. 8vo. 10s. 6d. (Presented.) (Hugh Rees, Ltd. London, 1909.

The Russo-Japanese War on Land, 1904-1905, *up to the Battle of Liao-Yang.* By J. H. ANDERSON. 8vo. 3s. 6d. (Presented.) (Hugh Rees, Ltd.) London, 1909.

Garibaldi and the Thousand. By G. M. TREVELYAN. 8vo. 7s. 6d. (Presented.) London, 1909.

Die Küstenbefestigungen der ausser-deutschen Seemächte. By Captain W. STAVENHAGEN. 8vo. 3s. (Presented.) (E. S. Mittler.) Berlin, 1909.

The Sovereignty of Malta and the Nature of its Title. With Notes and Appendices by ANGUS W. BARTOLO. 8vo (Presented.) (*Daily Malta Chronicle* Office.) Malta, 1909.

Military Map Reading. By Captain C. O. SHERRILL, Corps of Engineers, U.S.A. 8vo. (Presented.) (Ketcheson Printing Co.) Kansas, 1909.

Ueber Himmelsbeobachtungen in Militärischer Beleuchtung. By Captain W. STAVENHAGEN. Crown 8vo. (Presented.) (Treptow-Sternwarte.) Berlin, 1909.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

JULY, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

Continued from September JOURNAL, p. 1268.

CONTENTS.

	PAGE.
Part II. Section II. Magazine Articles	1399
Part II. Section III. Books, Pamphlets, etc., which have been distributed to Reference Libraries	1410
Abbreviations	1411

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II.

SECTION II.

MAGAZINE ARTICLES.

(For abbreviations, *see* page 1411.)

AERIAL NAVIGATION.

Flying Machines. M.W.B. (I.), No. 24, p. 529.

The Military Importance of Aeroplanes. I.R. Supp., 120, p. 119.

The Aero Exhibition. E., 26th March.

On the Action of Sails and Aeroplanes. E., 26th March.

Fifty Horse-Power Seven Cylinder Gnome Aero-motor. E., 26th March.

Reconnaissance from Captive Balloons. By Lieut. H. Chaumont. R.d'A., December.

Aeroplanes. By Lieuts. W. Beatty and A. Martin. R.E.J., April.

The Aerial Peril. By Captain T. G. Tulloch. N.C., May.

Aerial Flight. E., April 30th.

The Construction of Guns for use against Balloons. P.R.A.I., April.

Aero-motors. E., April 16th.

Military Kites (26 diagrams) (to be continued). Captain T. Th. Saconney. R. du G., February, March.

Progress in Airship and Aeroplane Construction in various Foreign Countries. O.M.Z., April.

How we Conquered the Air. By Wilbur and Orville Wright (translation by Major Ferrus). R.d'A., January.

Aerial Flight. E., May 14th.

Firing at Captive Balloons. By Lieut.-General Rohne. A.M.B. (I.), p. 266.

The Use of Airships in War. By Lord Montague of Beaulieu. N.D., June.

The Military Employment of Dirigible Balloons and Aeroplanes. (Mainly compiled from articles in the *Ruskii Invalid.*) M.A.G., May.

Progress in Aerial Navigation up-to-date. (Lecture by the Chief of the Russian Aeronautical Establishment.) M.A.G., May.

Notes from various Countries regarding Airships, Automobile Service, and Wireless Telegraphy. O.M.Z., May.

The Difficulty of Aerial Attack. By Major Sir A. Bannerman. J.U.S.I., May.

Defence of Harbours against Naval Airships. By Colonel F. G. Stone. J.U.S.I., May.

ARTILLERY.

A New Target Indicator. By Lieut. A. G. Leach. P.R.A.I., March.

The Field Gun of 1908. By Colonel H. A. Bethell. P.R.A.I., March.

Fire with High Explosive Shell against Shielded Guns. Translated from R.A.G., by Lieutenant J. R. Little. P.R.A.I., March.

Modern Artillery Tactics. By Lieut.-General von H. Rohne. A.M.B. (I.), February, p. 81.

Mechanical Time Fuzes. By P. Helwich. A.M.B. (I.), February, March.

The Italian Field Artillery in Case of War. M.W.B. No. 32 (I.), p. 713.

The Organization of the French and German Field Artillery. By Lieut.-General von Rohne. J.D.A.M., March, p. 244.

Technical Points for Field Artillery in Rear-guard Actions. M.W.B. No. 33, p. 732.

Field Artllery Fire over Cover lying in Front of the Battery. M.W.B. (I.) No. 36, p. 805.

The Krupp Independent Line of Sight. A.M.B. (I.), March, p. 222.

The Krupp Automatic Guns. A.M.B. (I.), March, p. 237.

Preparations for Opening Fire with Field Artillery. By Lieut.-General von Rohne. A.M.B. (I.), March, p. 212.

The 3-gun Battery. The Artillery of the Advanced Guard. By Captain Sorb. J.S.M., 1st, 15th March, 1st, 15th May.

Indirect Fire. A Periscope for Field Artillery (with seven diagrams). By Colonel Rouquerol. J.S.M., 15th March.

The Re-organization of the French Artillery. Report of a Special Com mission (to be continued). R.d'A., December, January.

The *Rôle* of Heavy Artillery: Its Employment in the Field, and its consequent Position on the March. By Major P. de S. Burney, P.U.S.I., April.

A New System of Fire Control for R.F. Guns, and a Proposed Scheme of Night Firing for all Coast Artillery Guns. By Lieutenant Halsey Dunwoody. U.S.A., March-April.

The Communications of a Field Artillery Brigade. By Lieutenant J. A. Dane. P.R.A.I., April.

A much-needed Reform in the Royal Artillery. By Major H. de T. Phillips. P.R.A.I., April.

The Selection and Training of the *Personnel* required in a Field Artillery Brigade for purposes of Communication in the Field. By Lieutenant J. C. Dundas. P.R.A.I., April.

The Construction of Guns for use against Balloons. P.R.A.I., April.

Improvement in Construction of Fuzes. Latest Patterns made by different Firms (continued). M.A.G., April.

Experiences of recent Wars regarding the Employment of Field Artillery (to be continued). By Major Seeger. J.D.A.M., February.

The Question of our Field Artillery Teams: Parliamentary Debate on this Subject. Colonel Marais. J.S.M., 1st April.

The Future of our Home Army Organization. By Colonel H. C. Simpson. P.R.A.I., May.

Artillery from an Infantry Point of View. By Lieut.-Colonel J. H. Crowe. P.R.A.I., May.

Engaging Rapid Targets with Q.F. Guns. By Lieutenant G. N. Walford. P.R.A.I., May.

Artillery in Battles of Encounter. A.M.B. (I.), p. 249.

Firing at Captive Balloons. By Lieut.-General Rohne. A.M.B. (I.), p. 266.

Modern Field Artillery. By Lieut.-General Rohne. A.M.B. (I.), p. 266.

Remarks on Foot Artillery (Coast Defence Guns). By Captain J. Berger. A.M.B. (I.), p. 291.

Resistance to the Close Attack of Infantry by Artillery in Covered Positions. M.W.B. (I.), No. 63, p. 1434.

The Organization and Employment of Field Howitzers. By von Beckmann (Instructor at the Military Technical Academy). J.D.A.M. (I.), p. 473.

The Co-operation of Field and Heavy Artillery. By Major-General Richter. A.M.B. (I.), p. 321.

The Life of Heavy Guns. By Lieut.-General Rohne. A.M.B. (I.), p. 338.

Improvements in the Construction of Carriages for Field and Mountain Guns. M.A.G., May.

The "Life" of Heavy Calibre Guns. M.A.G., May.

Reply from the Artillery school at Hajmasker to some previous Comments regarding indirect Firing and Concealed Positions. O.M.Z., May.

The New German Field Artillery *Matériel*, Mark 96 n/A. By Captain F. Jung. R.d'A., February.

Re-organisation of the French Artillery. R.d'A., February.

The Field Artillery *Matériel* of European Countries. R.d'A., February.

Defence of Harbours against Naval Airships. By Colonel F. G. Stone. J.U.S.I., May.

Artillery Fire in Land Fortresses. By V. Krishtafovich. A.J., March.

CAVALRY.

The French Cavalry. By Lieut.-Colonel H. C. Lowther. C.J., April.

Collection and Treatment of Wounded Cavalry. By Lieut.-Colonel Macpherson. C.J., April.

Organization of the Strategical Cavalry. Communicated by the General Staff. C.J., April.

Training of Yeomanry as Divisional Cavalry. By a Yeomanry Officer. C.J., April.

Some Notes, Some Notions, and a Tackle for the early Handling of Troublesome Australian Remounts. By Captain R. W. Grimshaw. C.J., April.

Diet and Feeding of the Horse. By Dr. C. Chomel. L.S.M., 1st March.

General Geslin de Bourgogne. Editorial. R.C., February.

Brigade, Divisional and Squadron Training. (1 map and 3 diagrams.) L'Irrégulier. (Concluded.) R.C., February.

Our Cavalry in the next War. By General von Bernhardi (translation from German by P.S.), (Continued.) R.C., February, March.

Letters of a Dragoon to the Members of the Army Commission. (Concluded.) R.C., February.

The Dismounted Action of Cavalry. By Jean d'Epée. J.S.M., 1st April.

Cavalry and Cyclists. By Captain Guédeney. R.C., March.

Seydlitz. Editorial. (Continued.) R.C., March.

Cavalry in the Russo-Japanese War. By Commandant Dixon. R.M.G., April.

French Views on the Training of Cavalry with a two years' Term of Service. K.M., March.

Cavalry Raids. K.M., March.

The New Austrian Cavalry Sword. K.M., March.

The Breaking of Untrained Horses. K.M., March.

"Schneekit"—Snow-paste—a Device for preventing Snow from balling on Horses' Feet. K.M., March.

The Strategical Work of Cavalry according to most Recent Ideas. K.M., April.

The Want of Enterprise on the part of the Russian Cavalry in the Yalu Operations, 1904. K.M., April.

The Equitation Regulations in the Austro-Hungarian Army as compared with the Principles of the "Plintzner and Fillis System." K.M., April.

Horses in the Colonial Operations in German S.W. Africa. K.M., April.

The Provision of Remounts in the German Army. K.M., April.

The Cossack Lava. By Mitkevich. V.S., March, April.

DEFENCE: HOME AND IMPERIAL.

Searchlight for Coast Defences. E., 19th March.

The Command of the Sea: What is it? By Major A. B. Churchill. J.U.S.I., April.

A Plea for a Comprehensive Policy of National Defence. By H. W. Wilson. N.R., May.

The Automobile Torpedo in Coast Defence. By Major R. P. Davis. U.S.A., March, April.

Observation Firing of Submarine Mines. By Captain Willis R. Vance. U.S.A., March, April.

A New System of Fire Control for R.F. Guns, and a Proposed Scheme of Night Firing for all Coast Artillery Guns. By Lieutenant Halsey Dunwoody. U.S.A., March-April.

An Ex-confederate's Views on National Defence. Anonymous. U.S.A., January, February.

The Defence Problem from the Imperial Standpoint. By L. S. Amery. N.D., May.

Remarks on Foot Artillery. Coast Defence Guns. By Captain J. Berger. A.M.B. (I.), p. 291.

The British Army and Home Defence. I.R., May, p. 170.

Defence of Harbours against Naval Airships. By Colonel F. G. Stone. J.U.S.I., May.

FORTIFICATION AND MILITARY ENGINEERING.

A Proposed Tension Bridge. By Captain E. N. Mozley. R.E.J., May.

Automatic Ground Torpedoes. Translated from French by Captain H. McElgin. U.S.A., March, April.

Armoured Fortification. P.R.A.I., April.

The Fortresses of Servia and Montenegro. J.D.A.M. (I.), p. 401.

The Illumination of the Foreground. M.W.B. (I.), No. 51, p. 1174.

Military Engineering in China, 1901-1906. 20 diagrams. (To be continued.) Captain Sabatier. R. du G., February, March.

Construction and Defensive Organization of the Post of Bou-Denib. (20 diagrams.) Colonel Fesch. R. du G., February.

Considerations regarding the Attack of Fortresses. (Continued.) O.M.Z., April.

A Graphic Method for Calculating Field Suspension Bridges. By Captain C. E. Sankey. R.E.J., June.

The Strength and Composition of the Garrison of Fortresses. By N. Buinitski. V.S., April.

The Construction of Metalled Roads in the Kuan-tung Peninsula by the Russians during the period 1898-1902. (With diagrams and maps.) By L. Debogori-Mokrievich. Inj., April.

The Defence of Fortresses. Consideration of the Question of the Grouping of Forts, Garrison, Armament, Cost, &c. By P. P. Stavitski. Inj., May.

HISTORICAL.

The Battle of Bailen, 17th to 19th July, 1808. A Review from M. Art. By Major-General J. C. Dalton, P.R.A.I., March.

The Operations of the German Troops in S.W. Africa. Translated from V.T.H. by Major F. Cunliffe Owen. P.R.A.I., March.

The Brunswick Regiments. J.U.S.I., March.

Means of Communication of Napoleon I. M.W.B. (I.), No. 30, p. 666, and No. 31, p. 685.

Marshal Canrobert. M.W.B. (I.), No. 31, p. 691.

Remarks on the Military Expedition of France to Morocco. M.W.B. (I.), No. 32, p. 707.

Montcalm at the Battle of Carillon (8th July, 1758). French General Staff. (Conclusion.) R.H., February.

The Armies of the Rhine under the French Directorate. French General Staff. (Concluded.) R.H., February, March, April.

The War of 1870-71. The Investment of Paris. French General Staff. (Continued.) R.H., February, March, April.

The Battle of Busaco (27th September, 1810). French General Staff. (Conclusion.) R.H., February.

Unpublished Letters of Napoleon I. French General Staff. (Continued.) R.H., February, March, April.

The Siege of Besançon by the Austrians in 1814. By Lieutenant Borrey. L.S.M., 1st, 15th February.

The Character of Napoleon I. and the Moral Influence wielded by him. By J. Diez. (Continued.) L.S.M., 1st, 15th February.

The Rise and Development of the French Revolutionary Army. By R. P. Dunn-Pattison. N.D., April.

Napoleon's Marshals. By Captain H. M. Davson. P.R.A.I., April.

Territorials of the Roman Imperial Army. By Colonel O. E. Ruck. R.E.J., May, June.

The Battle of Warburg. By Colonel H. Pearse. C.J., April.

The Russo-Japanese War, III. By Colonel W. H. Birkbeck. C.J., April.

A Short History of the Guides Cavalry. By Captain J.E. Blois Johnson. C.J., April.

A Hundred Years Ago. The Days of Ratisbon. M.W.B. (I.), No. 47, p. 1078.

Historical Studies of Military Administrative Officers. By M. Ponsynon. (Continued.) R.I.M., November.

A Study of the 16th August, 1870. (With Panorama sketches.) By Captain F. Canonne. (Continued.) R.M.G., January, February, March, April.

Notes on the Campaign in China (1858-1862). (1 plate and 4 diagrams.) By General Gallinard. R. du G., March.

The Social Character of the Influence of Napoleon I. By T. Diez. L.S.M., 1st and 15th March.

Reminiscences of a Captain of Cavalry (1851-1881). (With photographs.) By Henri Choppin. (Concluded.) R.C., February, March.

Paris—Tours. By Lieut.-General v. Görtz. M.W.B., 29th April.

Moral Condition of the Armies of the Rhine and the Moselle in the year. II. (1793 and 1794). French General Staff (L. H.). R.H., March.

The Battle of Messkirch (5th May, 1800). French General Staff. (Concluded.) R.H., March.

The Russo-Japanese War. French General Staff. (Continued.) R.M.E., March, April, May.

Albuera. By C. W. C. Oman. P.R.A.I., May.

Diary of the Marches and Fights of the Anjou Infantry Regiment in the War of the Austrian Succession, 1741-1748. By Lieutenant Cagnat. (Continued.) L.S.M., 15th April, 1st May.

The Battle of Hohenlinden (3rd December, 1800). French General Staff. (To be continued.) R.H., April.

Before, during, and after the Battle of Coulmiers. By Lieut.-General von Gortz. M.W.B. (I.), p. 1463.

A Century ago. By Colonel Schill. M.W.B. (I.), p. 1541.

The March to Vienna. By Lieut.-Colonel Edmond Ferry. J.S.M., 15th May.

MEDICAL.

The Effects of Heat during the South African War. By Lieut.-Colonel R. J. Simpson. J.R.A.M., March.

Anaphylaxis. By Captain J. C. Kennedy. J.R.A.M., March.

On the Specificity of the Thermostable Opsonins for Streptococci. By Major W. S. Harrison and Captain L. W. Harrison. J.R.A.M., March.

What can be done by Medical Officers of the Territorial Force in time of peace to prevent disease and further efficiency in time of war. By Lieut.-Colonel C. H. Melville. J.R.A.M., March.

The Results of Sanitation in the Efficiency of Armies in Peace and War. By Surgeon-General Sir A. Keogh. J.R.A.M., April.

Report on Investigations carried out in the Bahr el Ghazal Province on behalf of the Sudan Sleeping Sickness Commission, 1907-08. By Captain H. Ensor. J.R.A.M., April.

Scarlet Fever and "Fourth Disease." By Captain E. A. Bourke. J.R.A.M., April.

Vaccination. By Captain H. B. G. Waltham. J.R.A.M., April.

Malta Fever and Simple Continued Fever. By Major J. G. McNaught. J.R.A.M., April.

The 1908 Sleeping Sickness Commission of the Royal Society. By Colonel Sir David Bruce. J.R.A.M., April.

Collection and Treatment of Wounded Cavalry. By Lieut.-Colonel Macpherson. C.J., April.

The Medical Arrangements for the Territorial Force on Active Service. By Colonel Sir R. Temple. N.D., April.

Calibre of Missiles and Wounding Power. By Captain W. E. Asbeek-Brusse, Netherlands East Indian Army. K.T.Z. (III.).

The Scope of Teaching that should be followed in the newly established Chair of Hygiene and Sanitation in our Military and Naval Schools. By Major C. Lynch, U.S.A. J.M.S.I., March, April.

Barracks, Hygiene, &c. (4 diagrams.) A. Longhi. R. du G., February.

Utilization of Country Wagons for Transport of Sick and Wounded in War. M.A.G., March.

The Sanitary Organization of the Isthmian Canal, as it bears upon Anti-Malarial Work. By Colonel W. C. Gorgas, U.S.A. J.A.M.S., April.

Sanitary Service of the Swiss Army. By Captain L. C. Duncan, U.S.A. J.A.M.S., April.

Notes on the Medical Geography of Abyssinia. By Méd.-Major P. Doreau. A.H.M., January, February, March.

Notes on the Climate of Chêng-tu, the Capital of Ssu-Ch'uan. By Méd.-Major J. Legendre. A.H.M., January, February, March.

The Prevention of Malaria. By Prof. E. A. Minchin. J.A.S., April.

The Work of the Japanese Sanitary Corps on the Battlefield of Mukden. M.W.B. (I.), No. 63, p. 1436.

The Modern Organization of the Medical Department of the United States Army in the Field and its Application to one of the Battlefields of the Civil War. By Colonel V. Harvard, U.S. Army. J.A.M.S., May.

Compulsory Prophlaxis against Venereal Disease. By Asst.-Surgeon E. M. Brown, U.S. Navy. J.A.M.S., May.

Camp Sanitation. By Major Kirkpatrick, U.S. Army. J.A.M.S., May.

The Treatment of Gunshot Wounds of the Abdomen, as advocated by French Military Surgeons. By Captain C. N. Barney, U.S. Army. J.A.M.S., May.

Care of the Sick and Wounded in the Territorial Force. By Miss Haldane. N.D., June.

An Experimental Research on the Viability of the Bacillus Typhosus as excreted under natural conditions by the "chronic carrier." By Major J. C. Morgan and Captain D. Harvey. J.R.A.M., June.

The Organization of the Army for the Evacuation of Sick and Wounded. By Major E. T. Birrell. J.R.A.M., June.

Notes on the Fevers prevalent at Ferozepore, in the Punjab. By Lieut.-Colonel G. Wilson. J.R.A.M., June.

On Surface Vaccination in suspected cases of Tubercle. By Major S. L. Cummins. J.R.A.M., June.

Hints on Camping Arrangements for Sanitary Officers. By Captain R. Tilbury Brown. J.R.A.M., June.

Physical Training and the Medical Profession. By Surgeon K. D. Bell. J.R.A.M., June.

Third Report of the Committee on Physiological Effects of Food, Training, and Clothing of the Soldier. J.R.A.M., June.

The Strategy of the Stomach. The Scientific Composition and Nutritive Value of the Russian Daily War Ration as compared to those of other Armies. (Continued.) By M. Borislavski. I.J., May.

MISCELLANEOUS.

Earthquake Relief Party of the Royal Army Medical Corps, Catona, January, 1909. By Captain H. S. Anderson. J.R.A.M., March.

The Supply of Ammunition. By Major C. E. Lawrie. P.R.A.I., March.

About the Russian Army. By A. V. Drygalski. M.W.B. (I.), No. 33, p. 738, and No. 34, p. 756.

A Russian Study of Falkenhausen's Book, "Great Wars in Modern Times." M.W.B., No. 36, p. 799.

The Veterinary Services of Armies in the Field. By Doctor C. Chomel. L.S.M., 15th February.

The Account of the Working of a Soldiers' Club. By Captain Bourgeat. L.S.M., 15th February.

Field Kitchens in the German Army. By Colonel E. Hartmann. R.E.J., May.

Mirrors for Searchlight Projectors. Translated by Major E. Godfrey Faussett. R.E.J., May.

Sidelights on German Preparations for War. By Semper Paratus. N.R., May.

The German Army. By General von Pelet Narbonne. N.R., May.

A New Principle in Weather Forecasting, and its Importance in Naval and Military Operations. By Colonel H. E. Rawson. P.U.S.I., April.

Tracking in the Desert. By Kaimakam von Dumreicher Bey. C.J., April.

The Prussian System of Horse-breeding and Remounts. By Colonel W. H. Birkbeck. C.J., April.

The Bulgarian, Roumanian, and Turkish Armies. O.M.Z., March.

The Schwarzlose Machine-gun. R.M.S., April, p. 313.

Automatic Rifles. By C. T. L.B.M., 14th February.

Fortifications, &c. Armoured machine-guns for the pursuit of Dirigible Balloons. R. du G., March.

Trials of Travelling Field Kitchens by Company 5-1 of the 1st Regiment of Engineers during the "Manœuvres of the Centre" in 1908. (4 diagrams.) Captain Escaffre. R. du G., January.

Progress in Foreign Armies, 1908. France, Russia. O.M.Z., April.

The Fleet of Austria-Hungary in comparison with the Fleets of other Great Powers. O.M.Z., April.

From the Khyber to the Kurram. By Lieut. R. A. Hill. P.R.A.I., May.

Electric Light and its use in war. By Major Clarinval. L.S.M., 1st and 15th May.

A Pattern of Equipment for Infantry. (8 diagrams.) By Lieutenant Brunet. L.R.I., 15th April.

Expenditure of Ammunition in the last war (Russo-Japanese) as compared with that in earlier campaigns, notably the Franco-German. (Extracted from "Schuss und Waffe.") M.A.G., March.

Schneiderite. An Explosive for Ammunition Purposes, manufactured by Schneider & Co., and composed of Ammon-Saltpetre and Nitric Napthaline. (Extracted from "Norsk Artilleri-Tidsskrift." M.A.G., March.

The Equitation Regulations in the Austro-Hungarian Army as compared with the Principles of the "Plintzner and Fillis System." K.M., April.

Our Duty to our Neighbour. By Captain C. Battine. F. Rev., June.

Forewarned but not Forearmed : A Warning from 1870-71. By Colonel Lonsdale Hale. N.C., June.

Willing Obedience. J.D.A.M. (I.), p. 492.

The Farmer and the Army Horse Question. By Major-General Sir W. G. Knox. N.R., June.

How it Strikes a "Later Victorian." By Colonel H. Wylly. N.D., June.

British Military Policy. By Captain C. Battine. N.D., June.

A Military Warning. By John Graham. N.D., June.

A Practical Rule for Determining the Time from the Stars. O.M.Z., May.

A Militia Army—Montenegro. French General Staff. R.M.E., May.

A Practical Range-finder. By Captain Marz, 4th Zouaves. L.R.I., 15th May.

The Italian Naval Manœuvres and Combined Naval and Military Operations of 1908. Communicated by the Director of Naval Intelligence. J.U.S.I., May.

A Glance at a War Horizon. By Major-General Sir W. G. Knox. N.C., June.

MOTORS AND MOTOR TRACTION.

Lessons from the Trials of Military Tractors. E., 19th March.

The Road Motors of the present day, and some unsolved problems connected with them. By Colonel H. L. Holden. E., 30th April.

Automobilism from a Military Point of View. (Continued.) J.S.M., 15th April.

Motor Transport in War. By Captain Godfrey Lowe. N.D., June.

Notes from various countries regarding Airships, Automobile Service, and Wireless Telegraphy. O.M.Z., May.

ORGANIZATION AND ADMINISTRATION.

The Lines of Communication of the Grand Army in 1806-07. French General Staff. (Continued.) R.H., February, March, April.

Some Notes on the provision of Horses, and the use of Cyclists with the Territorial Field Artillery. By Lieut.-Colonel G. R. Talbot. N.D., April.

A Much-needed Reform in the Royal Artillery. By Major H. de T. Phillips. P.R.A.I., April.

Organization of the Strategical Cavalry. Communicated by the General Staff. C.J., April.

British Military Affairs. M.W.B. (I.), No. 41, p. 943.

Present Condition of Army Reform in Russia. By A. von Drygalski. J.D.A.M. (I.), p. 383.

The Peace and War Strengths of the Belgian Army. N.M.B., Vol. 74, p. 77.

Historical Studies of Military Administrative Officers. (Continued.) By M. Ponsynon. R.I.M., November, 1908.

The Formation of Depôts. By General K. R.M.G., February.

The Paymasters of Units. (Concluded.) By General Luzeux. L.S.M., 15th March, 15th April, 15th May.

Discipline, Criminality, Military Justice. By Lieutenant Paul Maire. (Continued.) L.S.M., 1st and 15th April, 1st and 15th May.

Re-organization of the French Artillery. Report of a Special Commission. (To be continued.) R.d'A., December, January, February.

The Future of our Home Army Organization. By Colonel H. C. Simpson. P.R.A.I., May.

Reforms in the Russian Army in 1908. M.W.B. (I.), No. 59, p. 1348, No. 60, p. 1323.

Alterations in the Law of Compulsory Service in Holland. M.W.B. (I.), No. 59, p. 1352.

Notes on Military Matters in Turkey. M.W.B. (I.), No. 57, p. 1303.

Alterations in the Arrangements for Mobilization in Russia. M.W.B. (I.), No. 50, p. 1149.

French Views on the Training of Cavalry with a Two Years' Term of Service. K.M., March.

The Japanese Army on a Peace and War Footing. I.R. (Beiheft 101.)

The New Order concerning the Reserve Battalions of the Russian Infantry. M.W.B., 29th April.

The Re-organization of the French Infantry. (With diagrams.) By Major V. Dupuis. J.S.M., 15th May.

The Supply of the Troops in the War of 1904-05. By V. Nedzvyetski. I.J., April, May.

POLITICAL.

How Bismarck made three Wars. By H. W. Wilson. N.R., June.

The Neutrality of Belgium. By Y. N.D., June.

STRATEGICAL AND TACTICAL.

The Campaign in Virginia in May and June, 1864. By Lieut.-Colonel J. E. Edmonds. P.R.A.I., March.

The Cycle in Warfare. By Captain A. H. Trapmann. J.U.S.I., March.

The Present Military Situation in Austria-Hungary with reference to Servia and Montenegro. Communicated by the General Staff. J.U.S.I., March.

The German Imperial Manœuvres in 1908. (With diagrams.) French General Staff. (Concluded.) R.M.E., February, March.

The Austro-Italian Frontier and the Adriatic. (With diagrams, map, and tables.) French General Staff. (Concluded.) R.M.E., February, March, April, May.

The Attack and Defence of Entrenched Positions in the Field. By Major Fritsch. (Continued.) B.P.B.M., 15th and 28th February.

Superiority of Fire. By Lieut.-Colonel Hulsen. M.W.B., 2nd March, No. 29, p. 639.

Views on Tactics in Russia. N.M.B., 28th February, p. 50.

The Tactics of the Russian and Japanese Armies in the Manchurian War. (7 sketches and 1 engraving.) By Lieut.-Colonel Janin. (Concluded.) L.R.I., 15th February, 15th March, 15th April.

To what extent have the Conditions of Success in War been modified since 1871? By General von Blume. (French translation from German by Major Painvin.) (Concluded.) L.R.I., 15th February, 15th March.

The Realities of the Battlefield. (Maps.) By Major Grange. (Continued.) L.R.I., 15th February, 15th March, 15th April, 15th May.

A Sketch of the Campaign in the Guir (Hinterland of Morocco) in August and September, 1908. By Lieutenant Le Passant. J.S.M., 1st March.

A Study of the Russo-Japanese War. By General Baron de Heusch. (Concluded.) J.S.M., 15th March.

The Leadership of Armies. The Staff. The Commanders. By General Pédoya. (Continued.) J.S.M., 15th March, 1st April, 1st May.

Tactical Lessons of the Russo-Japanese War. By Major Niessel. (Concluded.) L.S.M., 15th February, 1st and 15th March, 1st April.

Strategic Advanced Guards; or, Manœuvres of Covering Troops. By Lieut.-Colonel J. B. Dumas. (Continued.) L.S.M., 15th February, 1st May.

An Appreciation of Austria-Hungary's Military Position. Translated from N.M.B. by Captain E. G. Wace. R.E.J., April.

Some Notes on Modern Tactics. By Major W. D. Bird. P.U.S.I., April.

The *Rôle* of Heavy Artillery: Its Employment in the Field, and its consequent Position on the March. By Major P. de S. Burney. P.U.S.I., April.

Casting Bombs from Airships. O.M.Z., March.

French Views on Mobility in the Defence. M.W.B. (I.), No. 46, p. 1053.

Modern French Tactics. By Lieut.-Colonel Balck. J.D.A.M. (I.), pp. 363, 453.

Silencing the Enemy's Artillery. By Von Reichenau. M.W.B. (I.), No. 48, p. 1097.

The Great Cavalry Manœuvres in Belgium in 1908. M.W.B. (I.), No. 48, p. 1097.

The Fortresses of Servia and Montenegro. J.D.A.M. (I.), p. 401.

The Illumination of the Foreground. M.W.B. (I.), No. 51, p. 1174.

Military Expeditions Overseas. M.W.B. (I.), No. 51, p. 1162.

The Imperial German Manœuvres in 1908. (Continued.) B.P.B.M., 31st March.

Strategical Studies. (To be continued.) By Major M. H. Mordacq. R.M.G., January, February, March, April.

Premature Attacks on Fortresses and the Japanese Attempt to take Port Arthur by storm. (With 2 maps.) By Major P. Defrasse. R.M.G., January.

Reconnaissance under Napoleon and in accordance with the new French Regulations. (1 map.) By Captain T. Romieux. R.M.G., January.

A Study of the General Character of the War in the Far East. The Losses in Manchuria and those in past wars. (Conclusion.) By Captain Culmann. R.M.G., January.

Fire Effect and the Advance to the Attack. By Major Vuillemot. R.M.G., February.

Counter Attack or *retour offensif*. (With 2 maps.) By Lieutenant Ray. R.M.G., February.

Is the Employment of Cyclist Battalions possible in modern war? (With 4 maps.) (To be continued.) By Captain L. Sabourdin. R.M.G., February.

The Campaign of 1704 in Germany. (With a map and 2 diagrams.) By Captain R. Baignol. R.M.G., March.

A Day at the Manœuvres of the Centre (1908). (With a map.) By Captain M——. R.M.G., March.

A Reply to the Treatise of Captain Sabourdin on the Employment of Cyclist Battalions in modern war. By Captain Quirot. (Concluded.) R.M.G., March, April.

Notes about the Fourth Arm in Co-operation with the other Three Arms. (1 diagram.) By Captain L. Colson. R. du G., January.

The Duties of Outposts. L.S.M., 1st April.

Considerations regarding the Attack of Fortresses. (Continued.) O.M.Z., April.

Frontal Extension and Formation in depth. By Major-General v. der Esch. M.W.B., 24th April.

Methods of Securing the Tactical Co-operation of all arms. By Major Niessel. (To be continued.) L.R.I., 15th March, 15th April, 15th May.

Artillery from an Infantry Point of View. By Lieut.-Colonel J. H Crowe. P.R.A.I., May.

Cavalry and Cyclists. By Captain Guédeney. R.C., March.

The Japanese Manœuvres in 1908. French General Staff. R.M.E., April.

Tactical Notes on the Campaign of 1806 (Auerstedt). French General Staff (P.B.) (Continued.) R.H., April.

German Opinions on Modern War. (A French translation of the article read by the German Emperor to his Generals in January, 1909.) By General von Schlieffen. R.M.G., April.

A Study of the 16th August, 1870. (Panorama sketches.) By Captain F. Canonne. (Continued.) R.M.G., January, February, March, April.

Infantry Fire in the Attack. (1 diagram.) By Lieut.-General von Major Cottetz. L.R.I., 15th April.

The Co-operation of the Three Arms. By General Percin. (Concluded.) J.S.M., 15th April, 1st May.

3-gun Batteries and the *Rôle* of Artillery with Advanced Guards. By Captain Sorb. (To be continued.) J.S.M., 1st May, 15th May.

The Strategical Work of Cavalry according to most recent ideas. K.M., April.

The Want of Enterprise on the Part of the Russian Cavalry in the Yalu Operations, 1904. K.M., April.

Infantry Firing over the Heads of Infantry. By Lieut.-General von H. Rohne. M.W.B., 27th April.

Natural and Artificial Methods of Distributing Infantry Fire. M.W.B. (I.), No. 64, p. 1450.

The Distant and the Close Attacks in Fortress Warfare. By Lieut.-Colonel Frobenius. K.T.Z., p. 193.

The Question of Machine Guns. K.T.Z., p. 201.

Military Technical Notes from the French Operations in Morocco. K.T.Z., p. 228.

Observations and Discussions concerning the Employment of Machine Guns in War, based on the experiences of the Russo-Japanese Campaign. O.M.Z., May.

A Study of the Tactics of the German Army. By Major Streicher. (To be continued.) L.R.I., 15th May.

The Tactics of Fortress Warfare. By A. Elchaninov. V.S., April, May.

TELEGRAPHS AND COMMUNICATIONS.

Communications on the Battlefields. J.U.S.I., March.

The Guarding of the Manchurian Railway. N.M.B. (16), Vol. 74, p. 49.

French and English Methods in Field Telegraphy. By Major E. G. Godfrey Faussett. R.E.J., May.

The Communications of a Field Artillery Brigade. By Lieut. J. A. Dane. P.R.A.I., April.

The Selection and Training of the *Personnel* required in a Field Artillery Brigade for Purposes of Communication in the Field. By Lieutenant J. C. Dundas. P.R.A.I., April.

Observations as to the Employment of Balloons in the Field, from experiences at manœuvres. O.M.Z., March.

The Strategic Railways of Venice. M.W.B. (I.), No. 37, p. 832.

Construction and Trials of reinforced concrete telegraph posts. (2 diagrams.) R. du G., March.

Visual Signalling in German East Africa from 1901-1908. (1 diagram.) R. du G., March.

The Function of the Earth in Radio-telegraphy. By J. A. Fleming. (Concluded.) E., 4th and 11th June.

Notes from various countries regarding Airships, Automobile Service, and Wireless Telegraphy. O.M.Z., May.

Researches in Radio-telegraphy. By J. A. Fleming. E., 11th June.

TRAINING AND EDUCATION.

The Swedish System of Training as applied to the recruit; its purpose and method of accomplishment. By Lieut.-Colonel E. Butt. J.R.A.M., March.

The Modern Military Instructor. By Lieutenant Marceau. B.P.B.M., 15th February.

Training for War. By Lieut.-General. Count von Haslingen. J.D.A.M. (I.), March.

Musketry Training and Rifle Ranges. French General Staff. L.R.I., 15th February.

Reserve Officers. By Captain Gustave Cognet. (Continued.) J.S.M., 1st, 15th March, 1st, 15th April.

Suggestions regarding the Training of an Infantry Regiment. By Lieut.-Colonel de Fonclare. (Continued.) J.S.M., 1st March, 1st April, 1st and 15th May.

The Training of Horse and Horseman. By Lieut. Brial, 4th Regiment Chasseurs d'Afrique. (Conclusion.) L.S.M., 1st February.

Mounted Infantry as Divisional Mounted Troops and with the Mounted Brigade. By Colonel A. J. Godley. C.J., April.

Training of Yeomanry as Divisional Cavalry. By a Yeomanry Officer. C.J., April.

Some Notes, some Notions, and a Tackle for the Early Handling of Troublesome Australian Remounts. By Captain R. W. Grimshaw. C.J., April.

The Necessity of Training. By Lieut.-General Sir H. Smith Dorrien. N.D. April.

Contribution from the School of Musketry—trials with new patterns of foresights—observation of fire in the case of the "Garbe" method (volley firing at varying ranges). O.M.Z., March, April.

The Imperial German Manœuvres in 1908. (Continued.) B.P.B.M., 31st March.

The Framing of Orders for Large Units. (Continued.) B.P.B.M., 15th and 31st March, and 15th April.

Service or Servitude. (Notes by an Infantry Officer.) "A.B." (Continued.) L.S.M., 1st and 15th March, 1st and 15th April, 1st and 15th May.

Falling Targets. By Captain D. L.S.M., 1st April.

The Duties of Outposts. L.S.M., 1st April.

Training of the Infantry N.C.O. By Captain Victor Duruy. J.S.M., 15th April.

Points to Note in the Japanese Manual for Infantry Training. M.W.B. (I.), No. 56, p. 1151.

The New (German) Cavalry Training. M.W.B. (Supplement), 4-5, p. 145.

Remarks on the Handling of Troops in the Field. M.W.B. (I.), No. 58, p. 1319.

The Influence of Manœuvres in Peace and War. M.W.B. (I.), No. 57, p. 1309.

Staff Rides and Manœuvres. By Lieut.-Colonel H. S. Jeudwine. R.E.J., June.

Description of a Practical Scheme set to one of the Courses, with comments. Opening of fire in the attack. Concentration and distribution of fire. The advance by rushes. (Contributions from the School of Musketry at Bruck, a.d.L.) O.M.Z., May.

The New Russian Infantry Training Regulations. L.R.I., 15th May.

Physical Training and the Medical Profession. By Surgeon K. D. Bell. J.R.A.M., June.

Third Report of the Committee on Physiological Effects of Food, Training, and Clothing on the Soldier. J.R.A.M., June.

TRANSPORT.

Military Transport on the Euphrates. I.R., Supp., 120, p. 89.

Some Possibilities of Modern Forms of Transport. By Captain R. Walker. R.E.J., April.

Past and Present Vehicles of the Army Service Corps. By Captain H. C. F. Cumberlege. A.S.C., April.

Military Transport on the Euphrates. Translated from M.W.B. A.S.C., April.

Supply and Transport in Somaliland. By Lieutenant R. T. Craig. A.S.C., April.

The Russian Supply and Transport Services during the Russo-Japanese War of 1904-05. Communicated by the General Staff. A.S.C., April.

The Road Motors of the present day, and some unsolved problems connected with them. By Colonel H. L. Holden. E., 30th April.

Motor Transport from a Military Point of View. R.M.S., April, p. 318.

PART II.

SECTION III.

BOOKS, PAMPHLETS, ETC., WHICH HAVE BEEN DISTRIBUTED TO REFERENCE LIBRARIES.

Report on a Cavalry Staff Ride held by the Director of Staff Duties, March, 1909.

Report on a Staff Tour held by the Chief of the General Staff, October, 1908.

Report on the Army Qualifying Examination held in March, 1909.

Report on the Competitive Examination for Commissions in the Regular Army held in March, 1909.

Field Service Manual, Medical (India).

Field Service Manual, Heavy Batteries R.G.A. and their Ammunition Columns (India).

Field Service Regulations, Chapter XIX. (India).

The Imperial General Staff.

ABBREVIATIONS.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
A. F.	Bulletin du Comité de l'Afrique française	M.	2 frs.	Paris.
A.F.H.	Archiv für Schiffs- und Tropen-Hygiene	½ M.	*	Leipzig.
A.H.M.	Annales d'hygiène et de médecine coloniale	M.	3 frs.	Paris.
A.J.	Artilleriskii Jurnal	M.	*	St. Petersburg.
A.M.B.	Artilleristische Monatshefte	M.	m.2.50	Berlin.
A.M.P.	Archives de médecine et de pharmacie militaires	M.	2 frs.	Paris.
A.M.S.	Proceedings of the Aldershot Military Society	...	/6	London.
A.N.R.	Army and Navy Register	W.	15 c.	Washington.
A.Q.R.	Imperial and Asiatic Quarterly Review	Q.	2/6	Woking.
A.S.C.	Army Service Corps Quarterly	Q.	2/-	Aldershot.
A.S.M.	Allgemeine schweizerische Militärzeitung	W.	*	Basle.
B.Mag.	Blackwood's Magazine	M.	2/6	Edinburgh.
B.M.J.	British Medical Journal	W.	/6	London.
B.P.B.M.	Bulletin de la Presse et de la Bibliographie militaires. (Supplement to J.M.O.B.)	F.	*	Brussels.
B.S.C.	Bulletin international des sociétés de la croix rouge	M.	50 c.	Geneva.
C.J.	Cavalry Journal	Q.	2/6	London.
C. Mag.	Canadian Magazine	M.	25 c.	Toronto.
C.M.G.	Canadian Military Gazette	F.	10 c.	Montreal.
C.O.J.	Colonial Office Journal	Q.	1/6	London.
Con.	Der Continent	M.	m.1.25	Berlin.
C.R.	Contemporary Review	M.	2/6	London.
D.M.S.	De militaire Spectator	M.	1 fr. 50	Haarlem.
D.M.Z.	Deutsche militärärztliche Zeitschrift	½ M.	*	Berlin.
E.	Engineering	W.	/6	London.
Ec.	Economist	W.	/8	London.
Emp. R.	Empire Review	M.	1/-	London.
E.R.	Edinburgh Review	Q.	6/-	London.
F.M.F.	Feuille militaire Fédérale	V.	40 c.	Berne.
F. Rev.	Fortnightly Review	M.	2/6	London.
I.J.	Intendanski Jurnal	M.	*	St. Petersburg.
I.M.T.	Indisch Militair Tijdschrift	M.	1 fr. 50	Batavia.
Inj.	Injeniernii Jurnal	M.	*	St. Petersburg.
I.R.	Internationale Revue (Armeen und Flotten)	M.	m. 3.25	Dresden.
J.A.M.S.	The Military Surgeon. Journal of the Assoc. of Military Surgeons	M.	35 c.	Carlisle, Penn.
J.A.S.	Journal of the African Society	Q.	6/-	London.
J.D.A.M.	Jahrbücher für die Deutsche Armee und Marine	M.	m. 2.50	Berlin.
J.M.O.B.	Journal militaire Officiel	M.	*	Brussels.
J.M.S.I.	Journal of the Military Service Institution	2 M.	50 c.	Governor's Island, N. York
J.M.S.S.	Journal of the Military Scientific Society (Russian)	Q.	1 Ro. 50kop.	St. Petersburg.
J.R.A.M.	Journal of the Royal Army Medical Corps	M.	2/-	London.
J.R.C.I.	Journal of the Royal Colonial Institute	M.	/6	London.
J.S.M.	Journal des Sciences militaires	M.	*	Paris.
J.U.S.I.	Journal of the Royal United Service Institution	M.	2/-	London.

W., published weekly; F., fortnightly; M., monthly; Q., quarterly; V., at irregular intervals; A., annually.

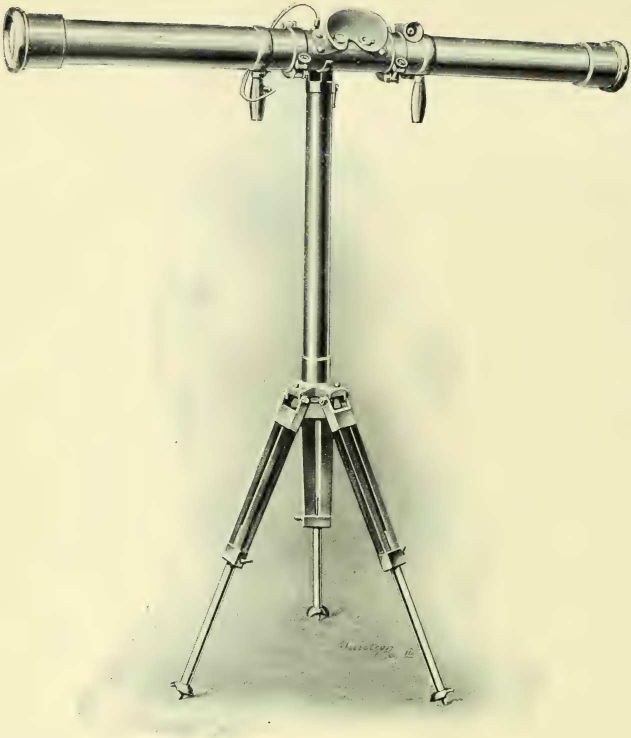
* Periodicals which can only be purchased by subscription.

ABBREVIATIONS.—contd.

Abbreviation.	Name of Newspaper or Periodical.		Price.	Place of Publication.
J.U.S.I. (N.S.W.)	Journal of the United Service Institution of New South Wales	A.	*	Sydney.
K.M. ...	Kavalleristische Monatshefte	M.	k. 2.	Vienna.
K.T.Z. ..	Kriegstechnische Zeitschrift	M.	m.1.50	Berlin.
L.... ...	Lancet	W.	-/7	London.
L.A.F. ...	Comité de l'Asie française, Bulletin ...	M.	2.25frs	Paris.
L.B.M. ...	La Belgique militaire	W.	25 c.	Brussels.
L.R.I. ...	La Revue d'Infanterie	M.	2 frs.	Paris.
L.S.M. ...	Le Spectateur militaire	F.	2 frs.	Paris.
M.A.G. ...	Mittn. über Gegenstände des Art.- u. Genie-Wesens	M.	*	Vienna.
M. Art. ...	Memorial de Artillería	M.	*	Madrid
M.C. ...	McClure's Magazine	M.	25 c.	New York.
M.I.E. ...	Memorial de ingenieros del ejército ...	M.	*	Madrid.
M.R. ...	Marine-Rundschau	M.	m. 2.	Berlin.
M.W.B. ...	Militär-Wöchenblatt	⅓W.	20 pf.	Berlin.
N.C. ...	Nineteenth Century	M.	2/6	London.
N.D. ...	National Defence	M.	1/-	London.
N.I.A. ...	Nation in Arms	M.	/3	London.
N.M.B. ...	Neue Militärische Blätter	W.	60 pf.	Berlin.
N.R. ...	National Review	M.	2/6	London.
O.M.Z. ...	Streffleurs militärische Zeitschrift, zugleich Organ der militär-wissenschaftlichen Vereine	M.	*	Vienna.
P.J. ...	Preussische Jahrbücher	M.	m.2.50	Berlin.
P.R.A.I. ...	Journal of the Royal Artillery	M.	2/6	Woolwich.
P.U.S.I. ...	Journal of the United Service Institution of India	Q.	2 Rs.	Simla.
Q.D. ..	Questions diplomatiques et coloniales...	F.	75 c.	Paris.
Q.R. ...	Quarterly Review...	Q.	6/-	London.
R.A.G. ...	Rivista di Artiglieria e Genio	M.	*	Rome.
R.C. ...	Revue de Cavalerie	M.	*	Paris.
R. d'A. ...	Revue d'Artillerie...	M.	*	Paris.
R.D.D.M.	Revue des Deux Mondes...	½M.	3 frs.	Paris.
R. du G....	Revue du Génie militaire	M.	2.50fr.	Paris.
R.E.J. ..	Royal Engineers' Journal	M.	1/6	Chatham.
R.I.C. ...	Revue Indo-Chinoise	F.	1.50frs	Hanoi.
R.I.M. ...	Revue du service de l'intendance militaire	M.	2 frs.	Paris.
R.H. ...	Revue d'Histoire	M.	2 frs.	Paris.
R.M.B. ...	Revue de l'Armée belge	2 M	*	Liège
R.M.E. ...	Revue militaire des Armées étrangères	M.	1 fr.	Paris.
R.M.G. ...	Revue militaire générale	M.	2.50fr.	Paris.
R.M.I. ...	Rivista militare italiana	M.	2 lire	Rome.
R.M.L. ...	Revista militar	F.	200 reis.	Lisbon.
R.M.S. ...	Revue militaire suisse	M.	*	Lucerne.
R.T.C. ...	Revue des Troupes Coloniales	M.	2 frs.	Paris.
S.G.R. ...	Saint George's Review	M.	1/-	London.
S.Z.A.G. ...	Schweizerische Zeitschrift für Artillerie und Genie	M.	*	Frauenfeld.
U.S.A. ...	United States Artillery Journal... ...	2 M.	50 c.	Fort Monroe
U.S.C. ...	United States Cavalry Association Journal	Q.	50 c.	Fort Leavenworth
U.S.I. ...	United States Infantry Association Journal	Q.	50 c.	Washington.
U.S.M. ...	United Service Magazine (Colburn's) ...	M.	2/-	London.
V.R.K. ..	Vyestnik Russkoi Konnitsi	F.	*	St. Petersburg.
V.S. ...	Voyennii Sbornik (Military Journal) ...	M.	*	St. Petersburg
V.T.H. ...	Vierteljahrshefte für Truppenführung und Heereskunde	Q.	*	Berlin.

W., published weekly; F., fortnightly; M., monthly; Q., quarterly; V., at irregular intervals; A., annually. * Periodicals which can only be purchased by subscription

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA



THE BARR AND STROUD RANGEFINDER FOR FIELD ARTILLERY.

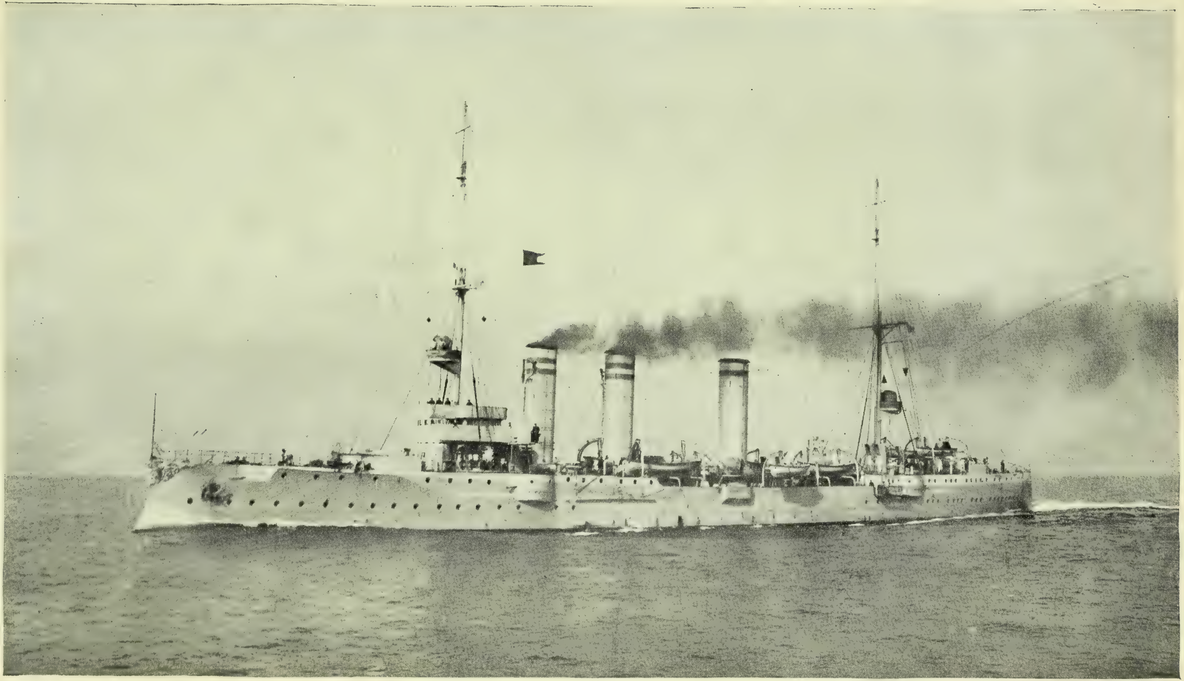
1 M. 37 (4 FT. 6 IN.) BASE. F.T. TYPE.

Arranged with upper or lower image inverted.

Approximate uncertainty of observation :—

3 yards at 1,000 yards.
12 yards ,, 2,000 ,,
48 ,, ,, 4,000 ,,
190 ,, ,, 8,000 ,,
300 ,, ,, 10,000 ,,

Barr and Stroud,
Anniesland,
Glasgow.



NEW GERMAN TURBINE CRUISER "STETTIN." 3,450 Tons; 13,500 I.H.P.; Speed, 25 Knots.

Armoured Deck, 2-inch tapering to ·8-inch; Conning Tower, 3·9-inch.

ARMAMENT:—Ten 40-calibre 4·1-inch Q.F. guns, eight 55-calibre 2-inch Q.F. guns and two submerged torpedo tubes.

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. NOVEMBER, 1909. No. 381.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

Major C. E. Pollock, R.A.M.C.
Major D. M. Robertson-Macdonald, Inns of Court Officers' Training Corps.
Captain F. S. Keen, Indian Army.
Captain J. G. Cadell, Indian Army.
Captain M. H. E. Welch, Royal Irish Regiment.
Lieutenant L. M. Bird, Royal Berkshire Regiment.
Lieutenant V. F. Price, Royal Indian Marine.
Second-Lieutenant C. J. Low, 14th Bn. London Regiment.
Major F. J. Heyworth, D.S.O., Scots Guards.
Captain C. B. Oldfield, 6th Bn. Middlesex Regiment.
Captain A. T. Paley, Rifle Brigade.
Captain R. F. Uniacke, Royal Inniskilling Fusiliers.
Second-Lieutenant D. C. Bolton, Manchester Regiment.
Lieutenant A. M. Winser, R.N.
Lieutenant Hon. R. A. R. Plunkett, R.N.
Captain G. F. Muller, R.M.L.I.
Captain H. R. Brancker, R.G.A.
Lieut.-Colonel J. W. Gifford, 5th Bn. Somersetshire Light Infantry.
Second-Lieutenant S. Wright, 21st Bn. London Regiment.
Sub-Lieutenant G. H. Heath, R.N.
Second-Lieutenant Hon. L. H. Tennyson, Coldstream Guards.
Captain E. W. Costello, V.C., Indian Army.
Captain G. H. F. Tailyour, R.H.A.
Second-Lieutenant R. D. White, Hampshire Yeomanry.
Captain S. R. Drury-Lowe, R.N.
Second-Lieutenant C. J. Balfour, Scots Guards.
Lieutenant D. MacLeod, North Staffordshire Regiment.
Captain H. C. L. Cock, R.G.A.
Lieutenant P. W. Malcolm, R.M.L.I.
Second-Lieutenant B. A. J. Havelock, North Staffordshire Regiment.
Captain C. E. Pym, 5th Lancers.
Lieut.-Colonel A. E. Hatch, Indian Army.
Captain P. P. E. de Berry, R.F.A.
Captain C. Hordern, R.E.
Commander N. L. Stanley, R.N.

Major E. V. Turner, R.E.
Major H. C. Sheppard, R.F.A.
Lieutenant D. B. Gray, Indian Army.
Lieut.-Colonel G. W. S. Patterson, New Zealand Forces
Commander M. H. Cobbe, R.N.
Lieutenant E. J. Cummings, R.G.A.
Captain H. St. M. Carter, R.A.M.C.
Lieutenant B. F. Trench, R.M.L.I.
Captain A. C. Jeffcoat, D.S.O., Royal Fusiliers.
Engineer-Commander W. K. Williams, R.N.

II. ROYAL MONMOUTHSHIRE MILITIA HISTORY.

The Council have granted permission for the above work to be published, as a special case, by the Institution.

III. RUSSIAN GOLD MEDAL.

The Council desire to place on record that at "The Exhibition of Latest Inventions," held at St. Petersburg during 1909, under the auspices of H.I.H. The Tsarevitch Alexis Nicolœvitch, where the various Naval and Military Journals of different countries formed one section of the Exhibition, the Judges, recognising the great usefulness which the JOURNAL OF THE R.U.S.I. renders in the cause of naval progress, unanimously awarded it the Great Gold Medal. The Council of the Institution regards the awarding of the Medal in question as a personal honour conferred on the Editor.

IV. LETTERS.

Members having letters addressed to them to the Institution must understand that the Council accept no responsibility in connection with their safety and proper delivery.

V. ADDITIONS TO THE MUSEUM.

6031. A Relic of the Mutiny at the Nore, being an instruction forbidding all officers of the fleet to go on shore, by order of the Committee of the Mutineers. Dated H.M.S. Swan, 1st June, 1797.—*Given by J. W. Marshall, Esq.*

6032. Helmet Plate of the 1st and 2nd Battalions The Cameronians. Helmet Plate of the 2nd and 3rd Battalions The Cameronians, worn from 1881 to 1895.. Cap Badge of The Cameronians, worn from 1881 to 1895.—*Given by Captain H. D. W. Lloyd.*

6035. Sword presented by the inhabitants of the island to Colonel J. Macphail on his leaving the Government of Cerigo, Ionian Islands, in 1830.—*Deposited by J. E. St. M. Macphail, Esq.*

6036. Shoulder-belt Plate of the St. Martin's-in-the-Fields Infantry Association, formed in May, 1798, and commanded by Major A. B. Drummond.—*Given by Lieut.-Colonel A. Leetham.*

6037. Officer's Belt Buckle of "The King's" (Liverpool Regiment), worn from 1881 to 1904.—*Given by Lieut.-Colonel E. Montagu.*

6038. A pair of Mule Trunks formerly the property of Brigadier-General John Nicholson, and used by him during the Indian Mutiny, 1857.—*Given by F. Stewart, Esq., of Simla, India.*

VI. CHANGES OF ADDRESS.

Members are requested to notify each change of address by separate letter, which should be received not later than the 10th of each month, and only one alteration can be registered during any one month.

THE ADVANTAGES, STRATEGICAL AND COMMERCIAL, OF A BATTLESHIP AND OCEAN-GOING STEAMER CANAL BETWEEN THE FORTH AND THE CLYDE.

By Vice-Admiral Sir C. CAMPBELL, K.C.M.G., C.B., D.S.O.

WITH TWO MAPS AND BIRD'S-EYE VIEW.

On Wednesday, 7th July, 1909.

His Grace The DUKE OF ARGYLL, K.T., G.C.M.G., G.C.V.O., in the Chair.

The CHAIRMAN (The Duke of Argyll) :—I have to apologise for being in this position to-day. The Duke of Sutherland, who was to have been the Chairman of this meeting, has been called away rather suddenly to New York, and he wrote to me from the ship in which he is sailing asking me to take his place at this meeting. I am sorry to say I shall have to leave before the end of the Paper, but there is a most efficient Chairman to take my place. As you are aware, it is only lately that the question of making a canal from the Clyde to the Firth of Forth has come much before the public. It is, however, a very old story, and one that was solved, as far as small tonnage traffic is concerned, by the Canal which at present exists. But it is manifestly advisable to have a canal of greater size than that; and in the meantime these meetings are being held, as Mr. Gladstone said before he introduced his Home Rule Bill, that "an examination and enquiry" may be made, in order that public attention may be directed to this matter, and that all information possible may be collected in regard to it; so that what seems at all events at first sight to be a thing which it is manifestly advisable to do, may not be lightly taken in hand, and also, with regard to figures, that people may not be frightened by the magnitude of the enterprise, and think it is "a bigger wall to jump" than it really is. I think Sir Charles Campbell's paper will show that very considerable progress has been made in regard to these enquiries, and will also indicate to you that a very considerable body, both of naval and military opinion, is in favour of the scheme. The chief difficulty, of course, is with regard to the size of warships now being built—a size which may be exceeded in every future decade. But we need not make up our minds at once that every battleship is to be a Leviathan requiring an enormous canal for its accommodation. The chances are more likely that a large class of very useful warships will be of smaller dimensions. The opinion is growing amongst naval men, of whom Sir Charles is a distinguished representative, that it is a matter of importance to have, so to speak, a back door to the defences of the Clyde and of the Firth of Forth, and that we should be able to get warships of a reasonable tonnage through quickly from the West to the East, and *vice-versâ*. It is also apparent that in the proposed canal only two locks are necessary for the purpose, one lock at Arrochar and one lock at Grangemouth. Formerly the objection was that the delay in passing through the locks on the canal would be so great that it would not be worth while to have the canal made at all, because a vessel could steam faster round the North of Scotland. We all know what Caithness storms are like sometimes; we all know that fogs get in the way of navigation, whereas a canal, if once made, would ensure the rapid and certain passage of fleets from the East to the West, or the West to the East, and give, as I say, a back door to the Forth fortifications and the Clyde. With regard to the military question, that again has to be debated. There is a certain body of opinion that it would involve the up-keep of a heavy force in order to guard this canal; in short, to prevent its being captured. It has always seemed a possible feat, if it were necessary to destroy a canal, to blow it up by a few tons of dynamite in a very short time, and as to the general defences requiring a special defence on the line of the canal, I think that must always be taken into account in connection with any war, for you could not, under any circumstances, allow a large force to land and separate England from Scotland, as would be the case were the military seizure of this central zone of the country to take place. I now call upon Admiral Sir Charles Campbell to read his paper.

LECTURE.

THE project for the construction of a deep waterway connecting the North Sea and the Atlantic Ocean has long been before the public. In 1790 a barge canal was opened between Grangemouth on the Forth and Bowling on the Clyde.

This canal has been continually a commercial success; but it is far from fulfilling the requirements of to-day, and has no strategical importance whatsoever.

There was a proposal to enlarge the Barge Canal, and one to construct a waterway, taking the same line of route. In either case there are two very serious objections:—

1. The summit level of 90 feet involving at least six locks—three up and three down—by which to lift and drop the largest battleships and ocean-going steamers.
2. The exit at Yoker on the north bank of the Clyde would necessitate deepening the river across the tide to at least 36 feet at low water beyond the tail of the bank, at a prohibitive original outlay, and a gigantic annual expenditure to keep this new channel from silting up.

These objections being insurmountable, I do not propose to take up your time with an investigation of minor details, but will confine myself to the route *viâ* Loch Lomond and Loch Long, which, after careful study and consultation, I am convinced is the only possible solution.

It has been surveyed by Messrs. D. & C. Stevenson, competent engineers, of George Street, Edinburgh, who have devoted years of careful study and hard work in order to put forward accurate estimates. The cost has been roughly estimated at £20,000,000 for 36-ft. depth, including the passage from Loch Lomond to Loch Long—and has only 21-ft. lift at exit and one at the entrance—maintaining the level of Loch Lomond all through at low water.

Experience teaches that estimates are exceeded when we come to face construction, but in this case the work is all straightforward, and owing to recent improvements in the methods of excavation, the estimates prepared are more likely to prove under than over the mark.

Colonel F. N. Maude, late R.E., has patented a hydraulic system of excavation which promises to effect a revolution in the digging of canals. I will ask him to explain it to you at the conclusion of this paper.

It is inconceivable that anyone can doubt the enormous benefit such a waterway would be to the nation, both strategically and commercially.

First and foremost it would be an all-important factor in the maintenance of peace. It would become the key to the strategic position in the North Sea, " The danger zone for many years to come "—" The zone of possible invasion."

My first point is the overwhelming necessity for Great Britain to hold and keep the command of the North Sea, or so-called German Ocean.

All history teaches that the acme of strategy is mobility, and especially on the sea, where the celerity with which a preponderating force can be massed in a given latitude and longitude will decide the issue of the conflict, and in all human probability the fate of the contending nations.

Napoleon's dictum, " That the whole art of war is to mass a greater force than the enemy at a given spot," remains the alpha and omega of all strategy, both by sea and land. Therefore, it is vital to the national safety that we should create the safest, most certain, and most expeditious method of transporting our battleships and destroyers from the Atlantic to the North Sea, and *vice-versâ*.

STRATEGIC IMPORTANCE.

The strategic value of this national waterway cannot be exaggerated :—

1. As a means to move a force of battleships, cruisers or torpedo craft from one sea to the other for the purpose of concentration and attack.

2. As a means to remove wounded vessels from the " danger zone," so as to dock and repair them in the comparatively safe ports on the Clyde, the Mersey, and Barrow, and in Belfast, or in the canal itself. The augmentation of Rosyth to a first-class dockyard in its exposed North Sea position would be obviated, saving from forty to fifty millions—more than double the cost of the proposed canal.

It would only be necessary to have an emergency dock (shore or floating) for a ship in a sinking condition ; all other wounded vessels could enter the canal and proceed in comparative safety to Stirling, Glasgow, Greenock, the Mersey, and Barrow, or

Belfast, or to the suggested dock at the Loch Lomond entrance, twenty-one miles from any possible gun fire; or floating dock or docks on Loch Lomond.

3. The strategic advantages are entirely national, and it is for this reason that the nation should construct the canal, or guarantee interest on the capital required. The commercial advantages would benefit the nation by increased facilities for trade, and should the undertaking prove remunerative, the nation could use the profit to construct battleships, cruisers and destroyers, reduce the national debt, or to relieve the tax-payer. Under these circumstances, what possible argument can be brought forward to gainsay the enormous strategical advantage this undertaking would be to these Islands, especially in maintaining the command of the North Sea?

Locks.

It is most important from the strategic point of view that the transfer of a fleet from one ocean to the other should be as rapid and safe as possible.

The usual delays are (*a*) the entrance and exit locks, and (*b*) the canal speed, and (*c*) want of water at intermediate climbing locks.

With regard to (*a*) it is a matter of deep regret that by the Loch Lomond route there must be a 21-ft. lift at each end to reach the level of Loch Lomond; but even this is better than the three or four very deep lifts and drops which are imperative for the high level route.

With a large fleet on the Loch Lomond level, the only drawback is the loss of time in entering the canal, for the time is only lost at one end.

With only one entrance lock it would be necessary at low tide to allow from twenty to thirty minutes for each ship, but by having two entrance and two exit battleship locks side by side, and a smaller lock for destroyers, barges, and other small craft, it would be possible to enter four or even, with practice, six ships an hour. They would work alternately, the water from the full lock helping to fill the empty one, the next ship going in while the ship preceding her was being raised. At high tide a few minutes would suffice, and at mean tide 10 to 15 minutes.

Speed.—By the Loch Lomond route the cutting will be hard, and the sides nearly perpendicular, and this will allow of a canal speed of at least 8 knots nearly the whole way, and on an emergency, such as the passing of a fleet in war, even greater speed.

Passing through Loch Lomond, all ships could go full speed at about twelve minutes interval.

The canal will be worked day and night, and in thick weather at possibly a reduced speed. One of the strong points of the Loch Lomond route is that there is no delay from tides or overcrowding.

COMMERCIAL VALUE.

National Commerce.

Home.—Again, who can doubt for one moment the commercial value of such a waterway to the intercoastal trade of England, Scotland and Ireland. Take any map of Great Britain and Ireland, and trace the route from any port on the East Coast to any port on the West Coast, and I venture to predict that you will immediately become saturated with certain conviction that the Forth and Clyde Canal is of vital importance to the development of national intercoastal commerce.

Foreign.—Having made this investigation, go further afield and study Phillip's commercial map of Northern Europe and the North Atlantic, and see for yourselves the commercial advantages of the Forth and Clyde route and passage *viâ* the North of Ireland, to Canada, Newfoundland, America, the Panama Canal, and Pacific, and, generally speaking, to all parts of the world.

Fogs, etc.—The well-established meteorological phenomenon (as evidenced by the coast guard statistics), that there are five days' fog by the North of Ireland Channel to fifty or sixty by the south route, would alone give all navigators and marine insurance companies a very strong preference for the canal route. Take the evidence of any experienced captain of the Navy, or Mercantile Marine, as to the difference it would make in his life and in the safety of the vessel under his command, if he could pass through mid-Scotland and out north of Ireland, instead of facing the fogs, tides, and crowded state of the English Channel, or the roundabout, uncanny, dangerous Pentland Firth.

A further study of the North Sea and Atlantic charts will convince you that in addition to safety there is in many cases a considerable saving in distance run, and Leith, Dundee, Aberdeen, Newcastle, Hull, and even London, would practically become on a par with western ports, and largely develop their western trade, whilst western ports would develop an eastern traffic.

I have no hesitation in predicting that this route would be generally used by all the nations on the shores of the North Sea, and that the Clyde end would become the departure station for ocean-going steamers bound for the Atlantic.

COMMERCIAL ADVANTAGES.

Until the canal is open, and probably for some time afterwards, it will be impossible to assert positively what will be the extent of the traffic to and from one coast to the other (intercoastal traffic). It is still more difficult to estimate with any certainty the through traffic, from the Baltic and North Sea ports to the West Coast, Ireland, America, and Canada.

We can only be certain that there is a large trade existing, and that it must be greatly increased by improving the facility of access from one port to another. There is a universal law that merchandise of every description travels along the route which gives the greatest economy in time and money. I have no hesitation in predicting that very soon after the canal is open it will pay its expenses and a moderate interest on capital. I agree with the statement in the *Glasgow Daily Record* that "It can be shown that from the commercial point of view the canal would prove a tremendously valuable undertaking to the British Isles generally, but especially to the Clyde and Forth as shipping estuaries," and I may add to the commercial and labour prosperity of mid-Scotland especially, and to Great Britain as a whole.

In order to assist the estimate of possible traffic, opinions have been obtained from some of the ports which might hope for increased trade. They are as follows:—

NATIONAL SHIP CANAL.

Glasgow.—Councillor Ure, having with the consent of the Corporation altered the notice of motion given by him on the 3rd ultimo, read as follows: "That, looking to the large amount of unemployment prevailing at the present time, and to the dedesirability of the Government, as far as possible, providing suitable work, the Corporation memorialise the Government to reconsider the proposal to construct a ship canal between the Forth and the Clyde, which would be a means of providing useful and serviceable work for skilled and unskilled labour, and would secure a direct navigable channel between the North Sea and the Atlantic, and would be advantageous both for the State and for the commerce of the country," moved in terms thereof.—Bailie Roderick Scott seconded the motion.—Councillor Battersby, seconded by Councillor James McFarlane, moved the previous question as an amendment.—After discussion, a vote was taken by a show of hands, when twenty-nine members voted for the motion and eight for the amendment.—The motion was accordingly declared to be carried.

Stirling.—The Commissioners of Forth Navigation on public grounds are in favour of the Ship Canal, and consider the Canal would undoubtedly help trade.

Portree.—There is no doubt the Ship Canal would be of great benefit to the Western Islands.

Whitby.—Consider that the Ship Canal would help trade and that the Harbour Authority favour the construction of a Ship Canal from the East to the West Coast.

Irvine.—The Harbour Trustees consider that the Ship Canal would help trade, and are in favour of a Ship Canal being made. The traffic to the Baltic ports, Denmark, Germany, etc., is about 9,000 tons, and to Tay, Forth and Humber ports about 6,000 tons or 15,000, but if the proposed Canal were made a considerable traffic could be developed.

Port Glasgow.—The Harbour Trust are in favour of a Canal being made, as they believe it would help trade.

Greenock.—The Greenock Harbour Trustees are in favour of a Ship Canal by Loch Lomond being made, as it would greatly help the trade to this Port. Last year 31,029 tons arrived at Greenock from the Baltic Ports, Sweden, Denmark, etc. The Directors of the Chamber of Commerce, Greenock, passed the following resolution:—"The Directors of the Chamber of Commerce are strongly of opinion that the existence of the proposed National Ship Canal, between the Forth and the Clyde, *viâ* Loch Lomond, would be of great advantage to the Port of Greenock and District, and while quite recognising that adequate commercial traffic might not be forthcoming to make such a Canal pay, yet the outlay by the Government, in the Directors' opinion, would be fully justified as forming part of the scheme of National Defence, especially with reference to the passing of H. M. ships from Rosyth naval base to the shipbuilding yards on the Clyde, and also to H. M. Torpedo Works at present under construction at Greenock."

Sligo.—The Harbour Commissioners are in favour of a Canal being made. With the present traffic, 14 to 17 vessels would pass through per annum.

Chester.—The Dee Conservancy Board consider that there will be from 1,300 to 3,000 tons per annum with the present trade.

Blyth.—Vessels leaving Blyth during 1908 for North American and Canadian Ports, 11 vessels, with a net register tonnage of 22,317. Vessels leaving for Clyde and other Ports, 5 vessels; tonnage, 10,937.

Londonderry.—The Commissioners are in favour of a Ship Canal being made, as they are of opinion the Canal would help trade. 9,076 tons would use the Canal with existing trade.

Belfast.—A Ship Canal would probably prove useful in the interests of trade and commerce, and they are inclined to view the scheme favourably.

Lancaster and Glasson.—Harbour Board are in favour of Canal being made, as it would help trade by making Baltic Ports, etc., nearer to us. We have about 8 vessels in the season to European Ports which would use the Canal. We used to have 2 vessels every spring from Dundee, but on account of the long way round it all now comes by rail.

Hartlepool.—Port and Harbour Commissioners favour the construction of a Ship Canal between the Forth and the West Coast.

Douglas, Isle of Man.—The Harbour Commissioners are in favour of a Canal being made from west to east. The tonnage at present that would use the Canal is about 2,500 per annum.

Berwick.—The Commissioners are in favour of the scheme, and in their opinion it will help trade. The average annual number of vessels is 6 to Glasgow and 20 to Bowling.

Maryport.—The traffic from the Harbour to the Baltic Ports, Norway and Sweden is 15,910 tons per annum.

Larne.—We get about 9,000 to 10,000 tons of wood pulp from Norway, Sweden and Russia, and we ship about 600 tons of bauxite to Newcastle-on-Tyne and Goole per annum.

Port Ellen.—The Harbour Authority are in favour of a Ship Canal being made, as it would help trade. Traffic, 4,000 to 5,000 tons per annum to the Forth and Tyne Ports.

Whitehaven.—The Harbour Board are in favour of a Ship Canal being constructed between the West and East Coasts of Scotland, and that in their opinion the Canal would be in the interests of trade on this coast. The number of vessels to the Baltic and neighbouring countries during 1908 was:—*Arrivals,* 6 steamers, 2 sailing ships. *Sailings,* 37 steamers.

Ardrossan.—The Directors are generally in favour of such a Ship Canal being made. That such a Canal, in their opinion, would help trade.

Montrose.—The Montrose Harbour Trustees consider that Canal would help trade. 7,200 tons shipped for Wales, etc., per annum, and 43 vessels for Campbeltown, Islay, Liverpool, etc.

Dundee.—The Harbour Trust are in favour of a Ship Canal, and consider that it would help trade. A very large quantity of Dundee manufactures go to America and Canada, goods being railed to Glasgow, 8,000 to 10,000 tons sail to New York per annum. An extensive traffic is carried on between Dundee and Liverpool, Manchester and Belfast.

In the meantime Dundee is practically shut out of traffic by sea with Glasgow and West Coast ports in England.

Peterhead.—The Harbour Trustees are in favour of a Ship Canal being made, as it would be of great advantage to craft going to and returning from the West Coast. The Canal would be used to a large extent by steam drifters, and the Harbour Trustees consider that general trade would derive much benefit from the Canal. Tonnage of 3,819 tons sailed from this Port to Liverpool and other Western ports last year, which would use the Canal.

Ayr.—Traffic per annum to Ports on the Baltic, Norway, etc., of 20,740 tons.

Replies from British Vice-Consuls.

Copenhagen.—Canal would benefit lines which trade regularly with the Baltic, such as Stott & Co., Liverpool; Cooker & Co., Liverpool; United S.S., Copenhagen; by obviating the dangerous passage round North of Scotland, and encourage direct trade between the North German Baltic ports and the West Coast of Scotland and England, and also with Ireland.

Amsterdam.—There is a direct weekly service between Holland and America, and a fortnightly service between this port and Liverpool.

Kiel.—It is most likely that the Sea Canal will be of influence upon the trade with bulk cargoes from other Baltic ports, although this will, of course, principally depend on the costs the passing through will incur for vessels, etc.

Hamburg.—It is believed that many vessels would use the Canal if dues are not prohibitive.

The Consul General Reports from Hamburg.

Arrivals from West Coast U.K. ports.	tons.
Liverpool	3,716
Manchester	39,718
Glasgow	955
Belfast	17,158
Dublin	1,719
Galway	378
Limerick	3,411
outward	67,055
and return	67,055
British ports	134,110

Foreign.	ships.	tons.
Canada	9	9,286
America	450	1,799,364
Total outd.		1,808,650
Total return		1,808,650
Total from this source alone		3,617,300

Grand total .. 3,751,410 tons per annum.

It may here be stated that, the dues will be regulated so as to obtain the greatest possible traffic. Several suggestions have been made, varying between 1s. 6d. and 6d. per ton, but this question must be left open till experience settles it. If the nation constructs the Canal or guarantees the interest on the capital required, the nation will decide what dues are best for the commercial prosperity of the realm and the profit of the undertaking. In the Barge Canal the dues vary from 7d. to 2s. 6d. per ton weight of goods carried—average for year, 1s. 7d. Traffic in 1908, over 100,000 tons.

Canal not an Expenditure but an Investment.

At first sight the cost of construction appears considerable, but when you reflect that the necessary funds expended form a sound investment, which, in addition to earning a reasonable dividend on the capital invested, will remain a strategic and commercial asset for all time, gradually increasing in value as new trade and traffic develops, the conviction is forced upon you that the possible temporary use of the national credit will be limited to four or five millions, and that will be repaid. Even if it were not, it would be a trifling sum to pay for such a permanent addition to the national defences.

When battleships, cruisers, etc., are built, we know that in the course of a decade they will have become obsolete and practically worthless! Not so with the construction of this national waterway. It must increase in value with age.

When the project of cutting through the Isthmus of Suez was mooted, owing to the pessimist cry that we should certainly lose India, our financiers held aloof, and Great Britain would not subscribe! It was only by good luck that the Khedive's shares came on the market and were snapped up by the Government of the day for four millions sterling. They are now worth thirty-two millions, and steadily advancing.

The nation is therefore to-day £28,000,000 richer, and consequently the National Debt reduced by that amount owing to the investment by the Government of the day of four millions sterling in the Suez Canal.

Another national investment of the same kind now presents itself for the consideration of the Government, which, in addition to its financial possibilities and its commercial and strategic value, will give healthy and remunerative employment to tens of thousands of the deserving unemployed for nine or ten years at an outlay of £2,000,000 per annum.

Such a phenomenal result as that of the Suez Canal cannot be predicted and can hardly be expected for the Forth and Clyde Canal; but there is not the slightest doubt that we may reasonably expect that the earnings, after paying 3 per cent., will pay the cost of construction long before the end of this century. The nation remaining in possession of this valuable commercial and strategical asset.

In the scheme suggested by the Forth and Clyde Canal National Association, as an alternative to national construction, all that is necessary for the immediate commencement of the work is that a Bill should be passed through Parliament with the necessary clauses for acquiring the land, and a guarantee of the interest at 3 per cent. on the necessary capital as it is called up during construction.

In return for this guarantee and advance the nation would acquire the following rights, and arrangements would be made by which the Government advance would be repaid:—

After the Canal is Open.

1. Free passage to and fro for all Government ships and cargoes.
2. Complete control in time of war.
3. Sinking fund of all profit after 3 per cent. has been paid, until advance has been redeemed!
4. After redemption, the Government still to retain a proportion of the profit for naval construction or for such other purposes as they may approve—reduction of the National Debt, etc.
5. Then all profit over 3 per cent. to go to reduce the capital outlay, if so desired bv the proprietors.

THE NAVY AND THE FORTH AND CLYDE CANAL.

It has been thought by some individuals, and especially by some of my brother officers, that the Navy Estimates might in some way be burdened with this national investment.

Under no circumstances or an any account whatsoever should the Navy have any connection with the financial arrangements for the construction of the Forth and Clyde Ship Canal, or for any funds invested during its construction, except possibly to arrange the loan.

All annual funds voted for our naval protection are urgently required for their legitimate purpose, viz., shipbuilding, upkeep, *personnel,* etc.

No other country has charged, or would think of charging, the naval vote with the construction of a national waterway. The Navy Department is the last on whom any contribution to this national investment should fall.

The precedent of Gibraltar harbour and docks would meet the case.

National Profit from Rise in Value of Land.

In addition to the saving on the construction of Rosyth, by the Loch Lomond route we have the increase in the value of the adjacent land to consider as a national asset.

At present, with few exceptions, it is ordinary grazing land, but it may be safely predicted that by the time the Canal is open, the facilities for transport on a great inter-coastal and inter-oceanic highway would cause a rise in building value. Towns and villages, manufactories, coaling stations, warehouses, are bound to spring into being along its banks, and it may be fairly estimated that the land in its immediate vicinity will reach at least ten times its present value before the opening day.

This rise in value alone will pay a considerable portion of the cost of construction.

This increment does not apply to the high-level route, as the land is already at manufacturing value.

The present landowners should share in this profit, in addition to the certain increase in the value of their remaining adjacent property.

In addition to the strategical and commercial advantages already enumerated, the nation would obtain a fair, if not a large, return for the funds expended, and with a sinking fund of all profit over 3 per cent., there is every probability that the loan would be paid off by the end of the first half of this century.

Our great commercial rivals have stolen a march on us from national funds! Woe be to our great Empire if we hesitate to take a leaf out of their book and follow their example. The strategic advantages of the Kiel Canal are trivial compared with the Forth and Clyde Canal as an alternative strategic route to the English Channel.

Should the British Government refuse to make the Canal with national funds by a temporary loan? It is the duty of the Government to assist the carrying out of the scheme by private enterprise by guaranteeing 3 per cent. on the capital expended. £2,000,000 per annum for nine years or £4,000,000 per annum for four and a half years is approximately the sum required, and allow £2,000,000 for interest and contingencies during construction. With such a guarantee, a company can be formed and the work commenced at once. Without such guarantee it is impossible.

A GLANCE AT WHAT OTHER NATIONS ARE DOING.

France. — Internal system of waterways, costing £120,000,000, independent of the proposed Havre-Paris-Marseilles Canal and the Bordeaux-Narbonne Canal, which may be delayed, but which will be carried through ultimately.

Germany has spent and is spending some £20,000,000 on making and deepening the Kaiser Wilhelm Canal to take the largest battleships. She is also linking up other canals. In 1905 nearly seventeen million sterling was sanctioned for a waterway from the Rhine to the Weser, with branches and a connection between the Oder and the Vistula; and it is proposed to connect the Danube and Rhine at a cost of seven million sterling. Plans have just been sanctioned for a canal from Kiel to the Elbe.

Austria is linking up the Danube, Oder, Moldau, Elbe, and the Werchsel rivers at an outlay of 31 million sterling.

Russia has ambitious projects from Lake Onega to the White Sea, and last year opened a ship canal 24 feet deep establishing free communication between the Black Sea and the Sea of Azoff.

Greece.—The Corinth Ship Canal, three millions.

Italy.—Project to connect the Adriatic with the Tyrrhenian Sea at a cost of 24 million sterling.

Sweden has connected the Baltic with the North Sea.

America is expending gigantic sums on the connection between the South Atlantic and Pacific, and at a cost of 100 millions sterling the creation of a vast system of international waterways, linking up the great lakes.

Canada is about to spend at least twenty millions on a project to connect Lake Huron and Montreal.

OTHER CANALS.

Kiel.

It is always well when trying to forecast the amount of success that may be reasonably expected as the result of any great undertaking, to base our expectations on the result of some similar scheme already in operation. In this case, from the strategical point of view, we have the Kiel Canal, which has given the German fleet a safe and easy route into the North Sea, with which they are so satisfied that they are spending an additional eleven millions in deepening it to float the battleships now building and of the future. It was never considered to have great commercial prospects, and is dependent on through traffic, besides being seriously handicapped by the Skaw route. Notwithstanding, the tonnage for the year ending 31st May, 1897, was 1,848,458 tons, and the revenue was 1,016,854 marks, which in the corresponding year 1907 had increased to 5,963,125 tons and 2,945,550 marks. For the year 1908 there was an increase of traffic of 1,840 vessels and of 460,316 tons register. The traffic round the Skaw is rapidly being diverted to the canal, and the same result will follow in the case of the Forth and Clyde Ship Canal.

Amsterdam.

No strategical importance. Revenue in 1902, 5,900,000 tons used the canal; in 1906 over 7,000,000.

In the above the geographical conditions and the volume of trade are so dissimilar to those of the Forth and Clyde that we shall have to look nearer home for an example upon which to base our calculations. The estimate of traffic and the beneficial results to the surrounding districts may be best arrived at by studying what has actually taken place in the case of the Forth and Clyde Barge Canal and the Manchester Ship Canal.

Existing Forth and Clyde Barge Canal.

The revenue has increased from £68,010 in 1906 to £77,968 in 1907, an increase of nearly £10,000 in a bad trade year.

The Manchester Ship Canal.

No route has the double advantage of strategy combined with commerce, which is such a prominent feature of the Mid-Scotland National Ship Canal; but for the commercial prospects we may expect to compare favourably with the result in the case of the Manchester Ship Canal in the traffic returns, and even more so in the rise in the value of property all along and in the vicinity of the line of route, and we must bear in mind that Manchester is a *cul-de-sac,* and not an oceanic and intercoastal highway from sea to sea.

Since the opening of the Canal the total tonnage in traffic and the total yearly revenue have been:—

Year.	*Tons.*	£
1894	925,659	97,901
1895	1,358,875	137,474
1896	1,826,237	182,330
1897	2,065,815	204,664
1898	2,595,585	236,225
1899	2,778,108	264,775
1900	3,060,516	290,830
1901	2,942,393	309,517
1902	3,418,059	358,491
1903	3,846,895	397,026
1904	3,917,578	418,043
1905	4,253,354	449,436
1906	4,700,924	498,937
1907	5,210,759	535,585
1908	4,582,496	506,975

Up to the present time the expenditure on capital account has been nearly £17,000,000.

A record such as that disclosed by these figures proclaims the success of the Canal. It could not be expected that the sanguine expectations of its brave promoters should be fully realised in the comparatively short period that has elapsed since the venture was consummated. But wonderful progress has been achieved. Mr. W. H. Hunter, who is now the chief engineer, declared, in a paper read at the International Engineering Congress in 1904, that "the operation of the Manchester Ship Canal has directly or indirectly affected beneficially the whole of the greatest industrial district on the face of the earth—a district of which the present population does not fall far short of 10,000,000 persons — while in the more limited area, of which the city of Manchester is the heart and centre, many industries have been saved from extinction, and many others from decline and ultimate decay."

Between the years 1880 and 1890 "it was only too apparent," said Mr. Hunter, "that in Manchester and its environment of manufacturing towns decadence was stamped upon almost every industry, and that all progress was arrested. One manufacturer after another moved his works to the sea-board, leaving disused factories, empty warehouses, and uninhabited dwellings. . . . . Now, not only has decline been arrested and decay averted, but lines of new and vigorous growth have shot, and are shooting, out on every side. North, south, east, and west, there is no exception—expansion is universal. Old industries have been revived, and new industries have been introduced. The change is definite and impressive, and has been due solely to the effect and influence of the Canal."

In the same paper Mr. Hunter quoted a very remarkable statement by Mr. C. W. Macara, President of the Federation of Master Cotton Spinners' Associations, and ex-President of the Manchester Cotton Association, that "the Canal has, in reduction of the cost of conveyance of raw cotton and of goods manufactured therefrom, been worth at least £500,000 to the cotton trade alone." There is no greater authority on the staple trade of Lancashire than Mr. Macara, and the conclusion at which he arrived is confirmed by Sir Frank Forbes Adam, formerly the President of the Manchester Chamber of Commerce.

I venture to predict even greater results for Glasgow, Greenock, Dumbarton, Leith, and, in a lesser degree, for all ports on the East and West Coast, but especially for Stirling, which would become a distributing centre on this great intercoastal and interoceanic highway.

To sum up from former papers and the opinions of other advocates of this desirable scheme, I contend that the Forth and Clyde Battleship Canal would combine in itself all the elements essential to the production of national wealth, and its chief advantages may be briefly summed up as follows:—

1. It would add another sea channel, and extend the coast-line through one of the principal industrial centres.
2. It would unite, at the most suitable point, the two seas most frequented by national commerce.
3. It would avoid the loss of life and property inseparable from the north and south routes, and would reduce the strain on the hulls and machinery of vessels, the insurance premiums, the fuel bill, and the loss of time coaling, and induce larger passenger traffic owing to increased safety in travelling and shorter passage.
4. It would reduce by hundreds of miles the distance between all the great shipping ports on the east and west coasts.
5. It would provide extensive harbour accommodation on important trade routes.
6. It would be of inestimable service in the protection of the national trade in the event of war.
7. It would enable men-of-war, ocean-going steamers, and coasting vessels to coal and also oil fuel directly at the source of supply.
8. It would more than double the mobility of our fleet, giving us a power of concentration in the Atlantic or North Sea which would be *denied* to our opponents, and be of inestimable advantage to us in reference to the success of any operation we had taken in hand.

No. 6 alone is amply sufficient grounds for constructing the Canal from national funds. This route could be safeguarded with the maximum of security and the minimum of State expenditure in cruisers. It could be freely used when the Channel and South of Ireland route would be impossible; and for the importation and distribution of Canadian grain, lumber, and wood pulp it would be invaluable.

The Royal Commission will in due course make their final report.

The Prime Minister has stated in the House of Commons that the question will be considered after the report of the Royal Commission is received.

It would, therefore, seem opportune that those who clearly see our supremacy in the North Sea menaced by the growing sea power of our great commercial rival, should put their shoulder to the wheel and try all they can to prove to the

Government that not only our commercial prosperity but our salvation from defeat at sea and consequent invasion may depend upon the speedy construction of this all-important national, self-supporting waterway. There is not a moment to lose. Once let this opportunity slip, and it may be a very long time before we get such another.

I beseech the East Coast ports, the landowners and the towns on or near the route, the City of Glasgow, the Government, the Members of both Houses of Parliament, and the British people of all grades and denominations to take this vital project seriously in hand, and not to let the matter rest until the national construction or guarantee of interest on the capital required for the Mid Scotland Battleship and Ocean-going Steamer Canal has been decided upon.

(During the reading of the paper the Chair was vacated by the Duke of Argyll, and occupied for the remainder of the meeting by Lord Saltoun.)

Commander the Marquis of GRAHAM, C.V.O., R.N.V.R. (Commanding Clyde Division) :—As my home is on the route of the proposed canal, and as I am acquainted with nearly every yard of it, I should like to say a few words on the subject of this paper. While I appreciate the trouble which the distinguished Admiral has taken in connection with this scheme and all the hard work he has put into it, I regret—and my regret is very sincere—that I shall have to adopt a critical attitude towards the scheme, if not absolutely to oppose. The Admiral has divided the scheme into two parts. He has dealt with it first of all from the strategical point of view, and then from a commercial point of view. I shall deal with it likewise strategically and commercially. From the strategical point of view of the use of this canal, it seems to me we must assume one of two things : either that on the outbreak of war the enemy's fleet will be in the North Sea and our fleet in the Atlantic; or else we are to assume that our fleet will be in the North Sea and the enemy's fleet in the Atlantic. It seems to me inconceivable that when our international relations become strained we should find our fleet on one side of Great Britain and the enemy's fleet on the other, and for this reason. Why should our fleet ever be in the Atlantic? Our fleets go to the Atlantic for short periods of manœuvres, but when they are there they are away from their coaling places, and their dockyards. The Atlantic, moreover, is of all places in the world the most impossible one for submarine boats and small torpedo craft to work. Therefore it is not really conceivable that on the outbreak of war our fleet will be found in the Atlantic. Again, if our fleet is in the Atlantic it is away from the coastline of any possible enemy. It is therefore away from what is called the frontier of England, for remember it has been laid down on the highest authority that the coastline of a foreign country is the frontier of England, and for that reason from the strategical point of view I do not consider this canal will be of importance. Secondly, I presume this canal is going to be defended, but I cannot see in the paper any provision for defence or the cost of defence. It will, I presume, not only have to be defended at both its entrances, but it will also have to be defended in some kind of manner along its entire route. A most distinguished authority on ordnance laid it down the other day that it would be possible for an aerial vessel in the future to carry a ton or two tons of high explosives. If that is the case, and an aerial vessel was to come across the route of the canal and drop explosives down on any vital point of the canal, or on a ship in it, it would block the waterway and render it useless. I consider the cost of defence, therefore, must be provided for and added to the cost of the canal. Then, again, I see the gallant Admiral states that at one part of the canal there would be repairing basins out of range of gun fire—in Loch Lomond and round about Stirling, but the cost of those repairing basins has not been mentioned. If you are not going to include the defence of the canal or repairing basins, you lose half the advantage of the canal, if it ever had any advantage. Now let us look at it from a commercial point of view. We have been told the cost is to be £20,000,000. A little later on, at the end of the paper, we are informed that the Government will be expected to guarantee a large sum of money, about £4,000,000 per annum for four years—that is £16,000,000; in other words, £36,000,000 has to be found to carry out this canal. Then the rate of interest is taken at 3 per cent., which, from a commercial point of view, is too low. It is lower than the rate of interest on any portion of the Manchester Canal Stock. The Admiral's comparison, again, of the value of other canals was rather unfortunate. He mentioned one in France, on which they are going to spend a prodigious sum of money. That canal is not completed, and therefore the evidence adduced is of no use with regard to the success of this one. Then the gallant Admiral quoted the Corinth Ship Canal in Greece—this canal was put up for sale on the market recently as a bad concern. With regard to the Panama Canal, the circumstances connected with it are wholly different from those connected with this canal. To circumnavigate Cape Horn and Southern America is very different from circumnavigating the North of Scotland, and places the comparison between those two canals out of court altogether. The mentioning of the Manchester Ship Canal was very unfortunate indeed. We are told in the paper that £17,000,000 of capital has been spent upon it; as a matter of fact the capital of that canal is quoted as being 10½ millions. If, therefore, the Admiral is correct in saying they have spent 17 millions, they have spent 6½ more millions than the amount of the original estimated capital expenditure. Although we were given figures showing the increasing annual value of the total canal returns, you must remember that those increasing returns have only just been sufficient to pay debenture interest, and that for more than ten years they have not paid a single dividend. Sir Charles Campbell was again very unfortunate in the commercial centres he quoted in favour of this canal. He has given us a list of towns which support the scheme. Among them he has quoted Portree. If that is Portree in the Isle of Skye it has only 800 inhabitants—it is a mere village. Again, he quoted Port Ellen. If that is the Port Ellen in the Island of Islay that also only has about 800 inhabitants. It is surely absurd to quote two villages as commercial centres of any significance in favour of this canal. I observe also that Greenock is quoted as supporting the scheme; but if you look at Greenock's reply you will find it is very qualified; it even doubts the commercial soundness of the canal. It says it approves of this canal as forming a part of the scheme of national defence, especially with reference to the passing of H.M. ships from Rosyth Naval Base to the shipbuilding yards on the Clyde and also H.M. Torpedo Works at present under construction at Greenock. I know the torpedo factory was put at Greenock because it was close to the range at Loch Long. Loch Long was selected as a torpedo range because of its absolute clearness of shipping; but if you go and make this canal and make Loch Long full of shipping, it will do away with the torpedo range, and that will do away with the torpedo factory. I think I know quite enough of the Greenock Harbour Trustees to say that, had they been told that, they would never have supported the scheme. As to the suggestion of carrying out the scheme for the sake of the unemployed, we all know there is no labour in this country so unremunerative as unemployed labour. We all know that in Glasgow the work given to the unemployed is, at Palace Rigg, a scandal, and a waste of public money. In London we have spent thousands of pounds on unemployed labour, and only recently the Council valuer valued the work done in the public parks by the unemployed during the past winter at £7,000, whereas the public expenditure upon it was £59,000, that is eight times the value of the work done. Yet we are recommended to push this scheme for the sake of giving employment to thousands of unemployed at a cost of £2,000,000 a year! With regard to the increase in the value of the land along the route of the canal, this I consider to be an appeal to win over the support of the landlords in the district. There never was a more unfortunate moment to seek to gain the approval of the landlords on the question of the possible increment in land values. We know well enough that if the land was to increase in value because of the advent of the canal it would be unearned increment, and I should like to know how many landlords on that route can look forward to unearned increment at the present political juncture. There is only one more point to which I wish to allude, and that deals with the question of sentiment. You must remember that this canal would go through the most historical part of Scotland. Loch Lomond and the Stirling district are localities to which thousands of people come every year from all over the world for the purpose of seeing the many historical places; but if we are going to have a canal, with German liners puffing smoke at every point and whistling at the various bends and bridges, that must do away with all the beauties and historical associations of the district. I venture to say that not only would the district be ruined by the ugly sight of this canal, but the whole of Scotland would be the poorer; and I am therefore sorry I am unable to support the Lecturer.

Mr. A. R. RAINY, M.P. :—I listened with a good deal of attention to the speech which we have just heard. It occurred to me, however, that there was a search for reasons against this scheme rather than a judicial consideration of the whole proposition. I may be mistaken, but it did appear to me that this was a violent attack, for reasons not mentioned, upon a particular scheme which has been laid before the country for consideration, and, therefore, if the Marquis of Graham will excuse me, I think his speech was scarcely judicial. Now let us just examine one or two of the things that were said. His lordship began by telling us that it was no advantage to have an outlet to the Atlantic because our fleets ought never to be there. That is the most extraordinary assumption I ever heard anybody make. I do not pretend to be a naval expert, but I think that I shall carry you with me, and possibly naval experts, when I say that the mobility of the fleet from one part of the sea to another is a most important factor. Therefore, simply to say your fleet ought not to be in the Atlantic is surely a proposition which cannot at once command universal consent. Suppose war between us and Germany, and we block the Channel, would not the German fleet, to attack our commerce, be compelled to go round by the Atlantic? I will say no more about that. Then Lord Graham talked about defence and the cost of the defence; but surely he knows that the defence for both ends of the canal is already assured. We are building a naval base at Rosyth. Is that going to be left undefended? We have all our great trade route to Glasgow; that is defended. Therefore, unless the enemy are to come in these marvellous flying machines with two tons of explosives, which is not within practical politics in the air, so far as I know, the defence is already assured. If a great engagement takes place in the North Sea or the Atlantic, it surely must be a very important thing that we should have a quiet place, unattackable, where the ships can be laid up and repaired. His lordship made another most extraordinary statement: that the total cost of this canal was going to be thirty-six millions. I want to assure him that, as a matter of fact, the total cost of this canal will be only twenty millions and no more. The interest on that amount at 3 per cent., is £600,000 a year, and therefore this scare with regard to double the cost is simply not correct as a statement of financial fact. With regard to the power of raising this money, I am prepared to state here that if the Government guarantee is given, the money will be subscribed to-morrow, and that is really the pertinent answer to the doubts cast upon the power of this proceeding going forward, because of the great risk and danger which is involved in the scheme. Then I would like to refer to his speech at another point. His lordship has referred to Portree and some other small places; but it must be remembered that some of these small villages, where few people live, are the headquarters of the fishing trade. Here the people, for instance, are very anxious to get their herrings as quickly as possible to different parts of the North Sea, the Baltic, and so on, and they suffer at the present moment because they cannot get their fish away. They are tied down by expensive railway freights and so on. It may not be a very serious sum, but every little helps, and every little ought to be considered when you are looking at a big scheme like this. If I may depart a little from Lord Graham's speech, I would like to say one or two words on the general question. I have been talking to some of the people in Glasgow, Greenock, and other places, and what I find is this:—There is a certain suspicion that if you make new trade routes from sea to sea, some of the trade will pass you by, and you will be therefore left stranded. What I think can be proved by statistics is that the general increase in the volume of trade always tends to benefit the places near which the trade passes. You are not to suppose that because a certain amount is deflected you are going to be left out in the cold. May I put it in this way? The number of tramways, omnibuses and underground railways has immensely enlarged the amount of travelling that is done by people who now no longer walk. The tramways, omnibuses and underground railways each thought they were going to be ruined by the other; but the immensely increasing volume of trade goes on and on, so that we do not know the end of it. Therefore you will find that, although people may look askance at it for the moment, because they are afraid they may be left high and dry, the real increase in the volume of trade is bound to help in the end even those who do not see that they are at present benefited. Lord Graham said: Why should not the canal go down through Dumbarton? The great thing, from the fleet point of view, is that you must go through in a hurry, and if you get into a narrow channel with all the traffic that is going on there, you will get jammed up at once. You would find that the whole traffic of Glasgow would be congested if you opened the canal down there at Dumbarton. There is one other point I should like to make before I sit down. It has been my good fortune, like the Duke of Argyll, to know the engineers of this scheme all my life. We were all at the same school—I believe in my old school. They were called in without any other idea except that of devising the best means of making the canal from the one side of Scotland to the other, and they have entertained every possible suggestion. I have had the good fortune to look at the plans, specifications and so on, and the amount of thought, energy and enterprise that is displayed in them is somewhat remarkable. It is a thoroughly solid and worked-out scheme, and therefore ought to have at least the fairest consideration. It is a scheme which has been thought out from the top to the bottom with a view to providing the best accommodation at the smallest price, which is a thing you do not always get in the new ventures which are put before the public. I want to say, in conclusion, also, that here is a work which, from its inception, has been looked upon not principally as a money-making affair. It has been looked on as a scheme which might benefit Scotland, England, Ireland and the Empire, which would be carried through at a reasonable cost, but which should have a beneficence far beyond the immediate profits of any company-mongering proposal. Therefore, upon those grounds, I think this meeting ought to give the scheme at least its provisional support, and I think it might well do so.

Mr. L. Graham H. Horton-Smith, F.S.A. Scot. :—I have listened with the greatest interest this afternoon, both to the paper of the gallant Admiral and also to the speeches of the Marquis of Graham and Mr. Rainy who followed him, and I hope that I may be pardoned if I venture to draw your attention to some aspects of the question which would hardly yet appear to have received the attention which, in my judgment, they so eminently deserve. As a rule, when one has but a few minutes in which to address an audience, the speaker's line must generally be to say that which he came to say rather than to waste the time of his audience, if indeed it could be called waste, in criticising or expressing his agreement with those who have preceded him. But I should like, if I may, to say a few words in regard to Lord Graham's observations as to the position at different times of the British fleets. I find that in August, 1907 (to give but a single illustration), the Channel Fleet was at Liverpool, on the west coast of this country, and that, too, at a time when (as shown by "Carausius" in the *United Service Magazine* for November, 1907) the Nore Division of the Home Fleet was certainly not in condition to bear the brunt of a hostile attack upon our eastern shores. So that it is quite clear that there are, or may be, times when a canal from west to east of this Island may not be merely of importance, but actually of vital service to the country, and, indeed, may even be the means of saving the country in the hour of war. Lord Graham referred again to the question of cost. Of course the question of cost may be important, but it is not the point of view from which I think the Government, strictly speaking, if actuated solely by the desire to preserve this Empire, should regard the matter. Either the canal is strategically a good one for this Empire to have, or it is not. If it is not, I for one care nothing about it; and again, if it is not, the Imperial Maritime League, which I represent, might not unanimously have passed a resolution in favour of it. One point only in regard to the canal, as originally proposed by the Admiral, did the League reserve. It was this: that the canal, in order adequately to safeguard our interests, ought to have, as one of the photographs shows it now is to have, a secondary exit into the Firth of Forth by means of a cutting to be made from the West of Rosyth (across the projecting promontory) to the Firth of Forth on the east, of such nature that in the event of the Forth bridge being blown up, and access to the sea on the east being thereby interrupted, the ships at Rosyth might yet be enabled to obtain access through the Firth of Forth to the North Sea. Another point of vast importance, which has not, I think, been touched upon to-day, is that the canal would enable the Clyde docks to be of more immediately effective service in time of war in the case of ships crippled on the East Coast. Certain canals have been referred to this afternoon. Certain have not. It is with the latter, in the main, that I propose to deal. The Panama Canal has been mentioned. That canal has been calculated by eminent authorities to be likely to double the striking force of the American fleet in the event of war. Lord Graham drew a distinction between that canal and this proposed canal. There is, I quite agree with him, a very important difference; but I do not think that it is a vital difference. The wars of to-day are, and will be, wars ever narrowing in time, ever shorter in their duration. It has been estimated that the next naval war with this country will not last more than seven days. If our ships do happen to be on the west coast of Scotland or on the west coast of England, when that war commences, it will take them about three days to get round to the east coast, and they will, or may, then probably be too late. Therefore, although the Panama Canal differs from this canal, in that on the one hand you have a voyage of some 14,000 miles to get from west to east or east to west, and in this case a much shorter voyage, nevertheless the distinction is not so great, I submit, as it might at first sight appear to be. Perhaps you will now be so kind as to focus your gaze for a moment on the map showing the East Frisian Islands, though I should like to preface my remarks in that connection by saying that even the admirable map which is exhibited on the wall does not show you the full extent of the naval advantages now possessed by Germany in regard to the North Sea. You will see Brunsbüttel at the western end of the Kiel Canal; at that place they are now projecting, if, indeed, they have not already commenced, two Dreadnought docks. If you will carry your eye along the hundred miles of coast from Brunsbüttel to the Island of Borkum (the most westerly of the East Frisian Islands), you will see a coastline big with fate for the British Empire, if we do not make full provision in the near future to meet the ever-increasing danger thence arising. If you carry your eye west from Brunsbüttel, you will arrive at Cuxhaven—a German naval base and very strongly fortified; and at the western extreme of these 100 miles you will notice the mouth of the Ems, on which Emden stands, and between the two, looking again from east to west, you will notice also Bremerhaven and Wilhelmshaven. At Wilhelmshaven to-day there are three *Dreadnought* docks ready, and at Bremerhaven another; while we have not a single dock on our east coast capable of taking a crippled *Dreadnought*. At Emden (which is only 278 miles distant from Hull) they are making a first-class torpedo base; and, further, enormous wharves have there been built for the rapid embarkation of troops; and every other possible method is being utilised also for making Emden a port of first-class importance to the German Empire. It has the additional merit of being a free port. Now let us see what the Germans have done by way of canalisation to increase their strength upon this coastline. Years ago there was a canal built between Emden and a place called Aurich, about half-way between Emden and Wilhelmshaven. Later on an additional canal was built connecting Aurich with Wilhelmshaven itself. That additional canal was completed in 1886. Last year they widened the entire canal from Emden to Wilhelmshaven—it is now known as the Ems-Jade Canal—so as to allow of the passage of the largest class of destroyers; and they propose to carry that scheme of canalisation yet further by at once building a canal across the piece of land which at present separates the Jade Bay (upon which Wilhelmshaven stands) from the estuary of the Weser (on which stands Bremerhaven), and so link up Wilhelmshaven with Bremerhaven. If Count von Reventlow's scheme is carried out, the Ems-Jade Canal itself will later be converted into one capable of taking battleships; but for the moment, happily, that scheme is in abeyance. But the extent of their canalisation does not end with what I have at present mentioned. They have, in addition, a canal known as the Ems-Dortmund Canal, completed in 1899, which, starting from Emden (where it meets the Ems-Jade Canal), joins the Ems at Oldersum, a few miles away, and, separating again from the Ems at Meppen, goes right down to the Westphalian coal measures (a very important matter), and links up further the important works of Messrs. Krupp at Essen—those works, the great extension of which (with the consequent acceleration of German naval construction), for so long remained either unknown to, or unaccountably unheeded by, our Admiralty. Reverting to the Ems-Jade Canal, you will see that if this canal will enable torpedo craft of the largest type to go from Emden on the one side to Wilhelmshaven on the other, and *vice versâ,* there are, to say the least of it, two exits which will have to be blockaded along this particular coastline, apart from the exit by the Kiel Canal. Lord Graham is quite right in saying that the frontier of the British Empire in the hour of war always has been, and, if the Empire is to stand, must be, "the enemy's coast." I would like to ask you, however, to bear with me one moment more while I tell you something about "the enemy's coast" when we are considering German strength and German facilities on the North Sea to-day. In the old days, when we formulated that doctrine, there was only one exit from the Baltic for Germany, and it was nowhere near Emden, Wilhelmshaven, Bremerhaven, Cuxhaven, or Brunsbüttel. It was right away to the North of Denmark, by the Skager Rak. If our fleet was massed there, and was in a sufficient superiority, which was held to mean a superiority of five to three, presumably we should have smashed the German or any other fleet which might have endeavoured to force a passage through. Now, however, the Germans have the second exit by the Kiel Canal, and further, as I have said, they now have these additional exits (to which I have referred) at Emden and Wilhelmshaven. There is, moreover, a further difficulty when we are considering how we can make this German coastline our frontier. For this reason. This particular part of the world—the particular 100 miles which I have mentioned—has, from the time of Pliny onwards, been subject to the most extraordinary vagaries of Nature. The sands have silted up in some places; in other places the opposite operation has taken place, and the net result is that this coastline, in addition to being protected on the North, for the larger part of its extent, by the East Frisian Islands, is protected yet further by mudbanks and sandbanks extending a great distance from high water mark into the sea to the North. Indeed, in order to understand the nature of this coast a naval chart needs to be consulted rather than a map. Really, the coastline of the German frontier there, is from four to six miles out to sea, and without the most experienced pilot it would admittedly be highly dangerous for a modern warship to approach this German coastline. Consequently the British fleet would have to stand out to sea about six miles north of these islands, and would be unable to see what was going on behind—that is, to the south of those islands. First of all it might not be possible to tell whether the German ships were at Emden or Wilhelmshaven, or some at one and some at the other, and secondly, even if that were known, it might still not be possible to say (owing to the facilities already accorded to destroyers, and later to be accorded to battleships, by the Ems-Jade Canal) from which of the two they might eventually decide to issue in force. Notice, again, to the east, the mouth of the Elbe. The real entrance to the Elbe (on which, of course, Brunsbüttel stands) lies nowhere near the shore, but four miles to the north of Cuxhaven.

The CHAIRMAN :—I do not want to interrupt this most interesting speech, but I think it is rather leaving the point. We are discussing to-day the other canal. I quite realise that the speaker is referring to the strategic point, but I do not think we require to go into all this detail, although it is most interesting, and I should very much like to listen to it.

Mr. HORTON-SMITH :—I have very nearly come to the conclusion of the remarks which I desired to make. May I only just add that the difficulties which would be experienced by a British fleet in the endeavour to blockade the series of exits to which I have referred appear to me to have been immeasurably increased by the cession of Heligoland to Germany. The reason I have gone into these details is this—and I am sure Lord Saltoun will pardon me for saying so—that upon the last occasion, when I went into these matters (at a meeting held in this hall on 17th March last), I was told afterwards by several gentlemen amongst the audience that they regarded them as of the utmost value to the discussion, both as showing the enormous strength which Germany has upon this fateful coastline, and also because they held (as I hold) that this fact alone enormously increases the importance of the point under consideration to-day, namely: Is the Forth and Clyde Canal strategically necessary or not? That was the point to which I was leading up. The greater the strength you can see that Germany has on the North Sea coastline, to which I have referred, the greater the necessity for increasing every possible strategical advantage for ourselves in that Sea. Speaking for myself, I cannot but hold the view that the proposed canal would enormously and in every way increase the striking force of the British Navy in time of war. I think I really need not add anything further. I am sorry if it could be thought that I have in a sense left the Forth and Clyde Canal, by transporting you in imagination to the German coast. But the reason I have done it is this, that unless you bear in mind what has already been, and what is even now being effected, upon the German coast, with reference not only to its particular land-features, but also with reference to the material power of Germany on that coast, you will never get the British public as a whole to appreciate—although, possibly, educated people might—the necessity for the construction of the Forth and Clyde Canal.

Major W. L. FORBES (late Royal Fusiliers) :—There is one point referred to by the last speaker with regard to Germany that I should like to call attention to. All his arguments were in favour of the strategical value of the canal. But Emden, the place he mentioned, is most important to my mind as bearing on the value of this Mid-Scotland canal from a commercial point of view. As the speaker said, Emden has been connected by a large canal with the Rhine, and the result is that a ship can now practically go from Emden to the Black Sea. It is hoped by many Germans that the trade of the Rhine will thus be kept in German territory until it passes out at Emden, without going through Holland at all. The

Mouth of the Forth lies almost in the direct line of the great timber trade of the Baltic, and this timber and the Canadian trade of Hamburg, as well as that of the great port of the future at Emden, should eventually go by the direct route through Scotland. I was very much struck with the remarks of the noble Marquis, who seemed to be so much opposed to the canal. After the very lucid explanation that has been given us by the gallant lecturer, I hardly see how a great many of his lordship's remarks can be borne out by fact. The Kiel Canal was made, at what was considered a great cost, to serve very much the same purpose as the lecturer now advocates on behalf of our Navy—to double the value of the fighting ships of Germany. The result of the Kiel Canal has been so important a factor in regard to the canalisation of the German Empire at the present moment that our northern neighbours have not only, roughly speaking, more than doubled the length of the great canals of the Empire, but they are now pushing forward great canals which will carry ocean-going ships into the remotest parts of Germany. That does not look as if the canals of Germany were not a success. We also know what the canal system has done for France. There are canals all over France, with railways and good roads alongside them. Anybody who travels through that country, particularly anyone who goes down to the South of France, cannot fail to see the beneficial results of these canals on the industries of the country. And it is the same in other countries. Look, for instance, at the Panama Canal. A few years ago it was said it could not be made, but the Panama Canal is going to be made. It is not a question of a few millions of money. I think the last calculation of the cost was 250,000,000 dollars; but even if the Panama Canal costs 500,000,000 dollars the American nation is behind it, and the construction is assured. Ample arrangements for its defence are being provided, and it is equally certain that our own naval and military authorities are perfectly well able to provide for the defence of the ingress or egress of the proposed Scottish canal. Another point that I think might be worth notice, because it was not very much enlarged on by the lecturer, is the length of the canal. It is only sixty-five miles long, whereas if a ship has to come round by sea from Edinburgh to Glasgow, the distance is either 500 or 900 miles. There is thus an immense difference between the length of journey a vessel would have to make in working through the proposed canal and going round by sea. Another point which Lord Graham advanced was that it was hardly worth while to quote the opinion of a small town like Portree. But the lecturer has quoted communities situated as widely apart as Glasgow and Dundee, and has told us that both these towns are in favour of the scheme. There is yet another point I should like to mention with regard to the present canal. Many people think that as there is already a barge canal it might be enlarged. But the present canal runs through a congested and very busy district; all kinds of works and industries have grown up alongside it, and there would be great difficulty in constructing a canal on that route which would comply with the conditions of the Admiralty, who require that the canal shall have a depth of 36 feet. The line, as advocated by the lecturer, runs, roughly speaking, through what I should call a flat country, and it appears to me that the construction of the canal should be a very simple task. At the same time, however, the configuration of the country on the northern side lends itself very much to the easy construction of bridges to carry the great railways over the canal, so that there will be no congestion and no delay caused to the railway systems which may have to cross the route. Lastly, allusion has been made to the fact that the proposed canal would pass through and destroy the amenities of a historic and beautiful part of Scotland; but almost at the heart of the country, through which it is proposed to take the canal, is the town of Stirling, and we are told that that town advocates the scheme.

T. MILLER MAGUIRE, M.A., LL.D. (Barrister-at-Law, Inner Temple) :—My speech has almost been taken out of my mouth by the disappearance of the map. I should not have spoken to-day but for the remarks of the gallant Marquis. The difficulty with regard to the matter is that his remarks might be applied to every canal under every circumstance, especially to great canals, which have strategic as well as commercial objects. One of his lordship's arguments was that the canal could be destroyed in a few minutes by aerial monsters. That does not frighten me in the smallest degree. A nation that can go under the sea in submarines can, if it pleases, work in the air equally well. In all such enterprises there is risk, and also retaliation is possible. Supposing our canal is going to be destroyed in a few moments by these aerial monsters, why should not the Suez Canal be destroyed in the same way? Why should not the Kiel Canal even be destroyed? Why should not the Panama Canal, if it is ever constructed, be destroyed? This argument applies equally to the destruction of every canal and of every great railway bridge, Forth, Tay, or other. The noble Marquis's argument about the beauties of Nature appealed to me, especially as I am told that there is only one fog off the Irish coast for ten fogs off the English coast. I was glad to hear of it. But surely you are not going to put the beauties of Nature against the permanence of the Empire! The same argument applies with regard to many enterprises. It was said with regard to the railways that they would destroy parks and obliterate all the beauties of Nature, and motors are the horror of all pedestrians on our beautiful country roads. But supposing we had listened to such an argument, where would the commerce of England be? If this island be the workshop of the world, and one of the greatest centres of its industrial enterprise be Glasgow, you have only to use your eyes to see at once that the proposed canal, especially at a time when the canal movement is daily growing in importance and when water transit is ten times cheaper than rail transit, would be of the greatest service to this island. Remember that other countries have many canals, one of which is one thousand miles long, and which was finished in the year 1889. The Chinese constructed magnificent canals many centuries ago. If these undertakings can be successes by other nations, why should not the British succeed? They ought to be in front and not behind. Apparently we are behind in military enterprise, in educational ability, and scientific invention, and now when the great world-wide importance of inland navigation is beginning to be realised, we are to be afraid of that too! Why should we not lead instead of lagging behind? The gallant Admiral said the canal would cost 20 millions, and the Marquis of Graham said it would cost 36 millions. But remember that we spent one thousand millions in strategy against the French in twenty-two years, 1793 to 1815. With regard to the ease whereby the people of our island can construct enormous works like the proposed canal, bear in mind also that we spend twenty millions a year on a contemptuous and odious game called golf, where people knock balls about for no useful object and in pure selfishness, and we spend, according to Lord Willoughby de Broke, in his most sarcastic and contemptuous article on " Sport " in the *National Review,* ten millions of pounds on hunters, and ten millions of pounds on hunting. We also spend ten millions on motors and about five millions on football, and similar spectacular so-called " sport "—altogether about sixty millions a year, most of it in tomfoolery, and yet we cannot absolutely spend a million a year, if not less, which will be the interest on this canal—I am now told it is £600,000 a year. Yet we can spend twenty millions a year on golf. I have done with that argument. We are not children—we are men. We must not lose our Island—our Empire—for such considerations. I would like to point out the *vis vitæ* of the British Empire. The soul of the British Empire is the United Kingdom, but that map does not at all represent the truth of the situation. I am always sorry when I see a mere map of the United Kingdom at these lectures without a map of the world. There ought to be a permanent map in nearly every public building in England and the Empire about the size of the wall. The whole question with regard to these Islands, according to Sironi, and every strategic geographer who goes to the root of the matter, is their relation to the whole traffic of the world, to international strategy. We may be at war—I am not speaking of Germany only, I have the greatest possible admiration for Germany; I wish we had half the brains of the German people, and half their capacity for using them. We may be at war with other States besides Germany. Ten years ago we were thinking of fighting France, and we might have to fight the United States—we have fought them before. Now consider the enormous value of the great Scotch canal under any of these circumstances.

The CHAIRMAN :—I think you are a little diffuse; you are getting away from the point of the paper.

T. MILLER MAGUIRE :—The point which I want to emphasise is that the position of these Islands is decisive of the value of the canal—as to the German Ocean and the Atlantic, and as to every possible passage from the Atlantic, round the top of our Islands, or from the Baltic, north or south. Anything that facilitates connection between the disjointed sections of our own naval forces, or is on the flank of any adverse movement, as that canal must be, is worth not merely £600,000 a year but £1,600,000 a year. I cannot agree therefore with any of the remarks of the noble Marquis, at which indeed I am surprised, inasmuch as I believe it would be a financial boon to Scotland and not detract in the least from the attractions of the charming district, from the Trossachs to Loch Lomond. I venture, then, to give the heartiest support to the views of the lecturer. The canal system of our Isles, both in Great Britain and Scotland, has been too long ignored and overshadowed by railways. The future of commerce may be with canals!

Lieut.-Colonel A. D. SETON (late Fife Royal Field Reserve Artillery) :—I only rise for the purpose of asking the gallant Admiral to be good enough in his reply to give me a little information with regard to Loch Long. I know Loch Long pretty well, and it appears to me that to make it effective as an entrance to the canal it would be necessary to do a good deal of dredging there. Nothing has been mentioned about that, nor anything in the way of cost in connection with it. The Loch, as you can see from the map, is extremely narrow, and as far as I know the deep water channel is even narrower; and therefore it appears to me a considerable amount of dredging would have to be done. I would also like to know what kind of arrangement would be made for the entrance to the canal at the Arrachar end, because there is already very little room there? The captains of the steamboats will tell you it is extremely difficult to get alongside the pier at Arrachar if there is a strong wind blowing, and there is a lot of shallow water there, so that it would require a good deal of dredging to make it suitable for the purposes proposed. Personally, I am entirely in favour of the canal, and I am very glad to find the scheme has gone so far as it has. There is one point I could not understand quite clearly, but I have no doubt the Lecturer will answer it. I know my countrymen pretty well, and I wish to tell him and those who are associated with him, that there must not be any uncertainty with regard to anything connected with the canal. There does seem to be a little uncertainty as to whether it will be the Tarbet and Arrachar cut out of Loch Lomond, or whether it will be through Dumbarton. I understand there are great physical difficulties with regard to the Dumbarton route, apart from the narrowness of the Clyde at Dumbarton; but in the very pretty picture which was exhibited, the Tarbet and Arrachar cut was not shown at all; the canal was shown as going through Balloch, which perhaps was the early scheme. I think that should be corrected, otherwise my careful countrymen will say: "We will wait until it is a little more settled before we go in for it." I only add that little piece of friendly advice—do not leave anything to chance in a matter of this sort.

Mr. STEVENSON :—I should like, in reply to Colonel Seton, to say that in Loch Lomond there is ample depth of water at present for any ironclad—there is between 50 and 100 fathoms depth, so that there is no need for any dredging.

Colonel SETON :—I know there is a lot of water in the centre.

Mr. STEVENSON :—It is amply wide enough for as many ironclads as you like.[1]

Colonel E. ST. C. PEMBERTON, R.E. :—I think that if the canal justifies its construction on strategic grounds there remains very little further to be said, considering the political position of Europe at the present moment. Whether the canal will cost 20 millions, 30 millions or 40 millions, is to my mind quite immaterial. We are a wealthy country, and if the canal is necessary for the safety of the Empire, why for heaven's sake let us construct it at all costs. The Marquis of Graham raised a point as to whether it would not be futile to imagine that when this country was being menaced or on the outbreak of war, our ships could be in the wrong place. I can imagine many unfavourable circumstances that might arise which would tend to leave ships in the wrong place at that critical time, and therefore I say that if the construction of this canal would tend to leave nothing to chance, let it be constructed. I will give you an example, if I may mention it, in the Russo-Japanese War. At the outbreak of war one-half of the Russian fleet was at Vladivostock and part at Port Arthur, two naval bases separated by hundreds of miles. The whole result of that war might indirectly be attributed to the fact that the Russian fleet was not concentrated at one spot, either

---

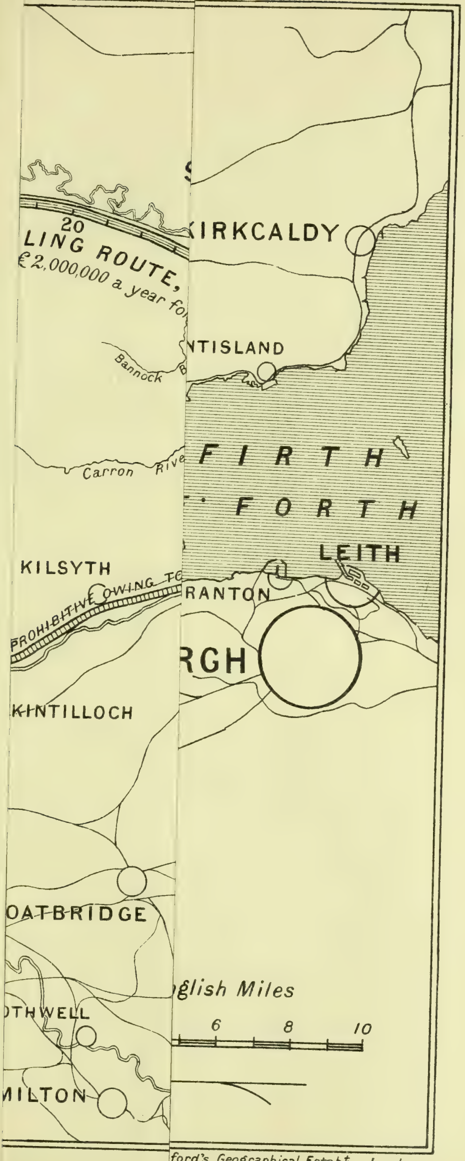
[1] Either Mr. Stevenson misunderstood what I said, or is wrongly reported. I never questioned the depth of water in Loch *Lomond*, but did, and do, doubt if there is a channel of sufficient depth near the head of Loch Long to admit of two heavy ships passing one another. My ear did not detect at the meeting that Mr. Stevenson said Loch *Lomond* instead of Loch *Long*.—A. D. SETON.

Vladivostock or Port Arthur, or elsewhere, at the outbreak of the war. It is difficult to say to what causes the Russian defeat can be attributed, but that was certainly one cause. What I imagine might be the condition of things is that ships would not be brought into the North Sea because the Cabinet would be afraid of doing anything which might provoke hostilities. That is a real danger. I know it has been repeated over and over again that it is a wrong thing to say, but it is no less real, and it is more real now in these democratic times than it has ever been before. I do not think the Cabinet will put the ships where they should be for fear of giving offence. On many occasions the forces of this Empire have not been in the right place at the right time. At the time of the South African War were there sufficient forces in South Africa? No, because it was said it would bring on war; and in the same way the same argument will be used with regard to the North Sea.

Vice-Admiral Sir CHARLES CAMPBELL, in reply, said:—So very little has been said in opposition to the proposed strategical and commercial waterway, nearly everybody having spoken in favour of it, that I shall not have to detain you very long in my reply. I have to thank one speaker, however, for the remarks which he made about the canal, and that is the Marquis of Graham. I am really deeply indebted to him for what he said. He mentioned one point which I quite expected to hear to-day, that the locks might be attacked by airships. I am quite willing to grant that airships might injure the locks, if means are not taken to safeguard them; but the same may be said of all railways, docks, ships, etc. We shall have gates on Loch Lomond at entrance and exit, to minimise risk, and if the locks are open to be attacked by airships they must be defended by airships, and even if the airship attack were successful, the canal would have done good in the first place before that. While I am speaking on that point, I should like to say that I happen to be on the Committee of the Aero Club, and I do not suppose that we in this country are going to be so supine as to do nothing with regard to aerial navigation. We shall have an aerial defence if the national interests require it. If there is a lock there, and you expect it to be attacked by airships, of course you will put an airship on duty there—there is not the slightest difficulty about it. The sources of attack can, and must be, met as they occur, and therefore I may fairly claim that that particular criticism of his lordship is not successful. Then reference was made to the Panama Canal and the special difficulties connected with its construction. In the other canals which have been made, special difficulties have had to be overcome, and enormous sums of money have been expended on them. Why? Because the Governments of those countries believed that it was essential that the canals should be made; and if we can only persuade our Government that it is essential, as I believe it to be, that this canal should be made, there is no reason why we should not run the risk of spending a paltry sum of four million pounds, that being the extent of the national risk in making the canal. The canal would not do away with the necessity for the torpedo factory on the proposed site. In fact, it is an additional reason for it. You can protect the canal and render the range available for either coast. Nothing but an airship could get up to touch the locks, because there is the whole of Loch Long to be traversed, and how are they going to get up that space? You can have the lock a few hundred yards up the canal, and perhaps round the corner if necessary, and make the curve there. There is no reason why you should not do that. Then another question was asked, which I thought was covered by the clear

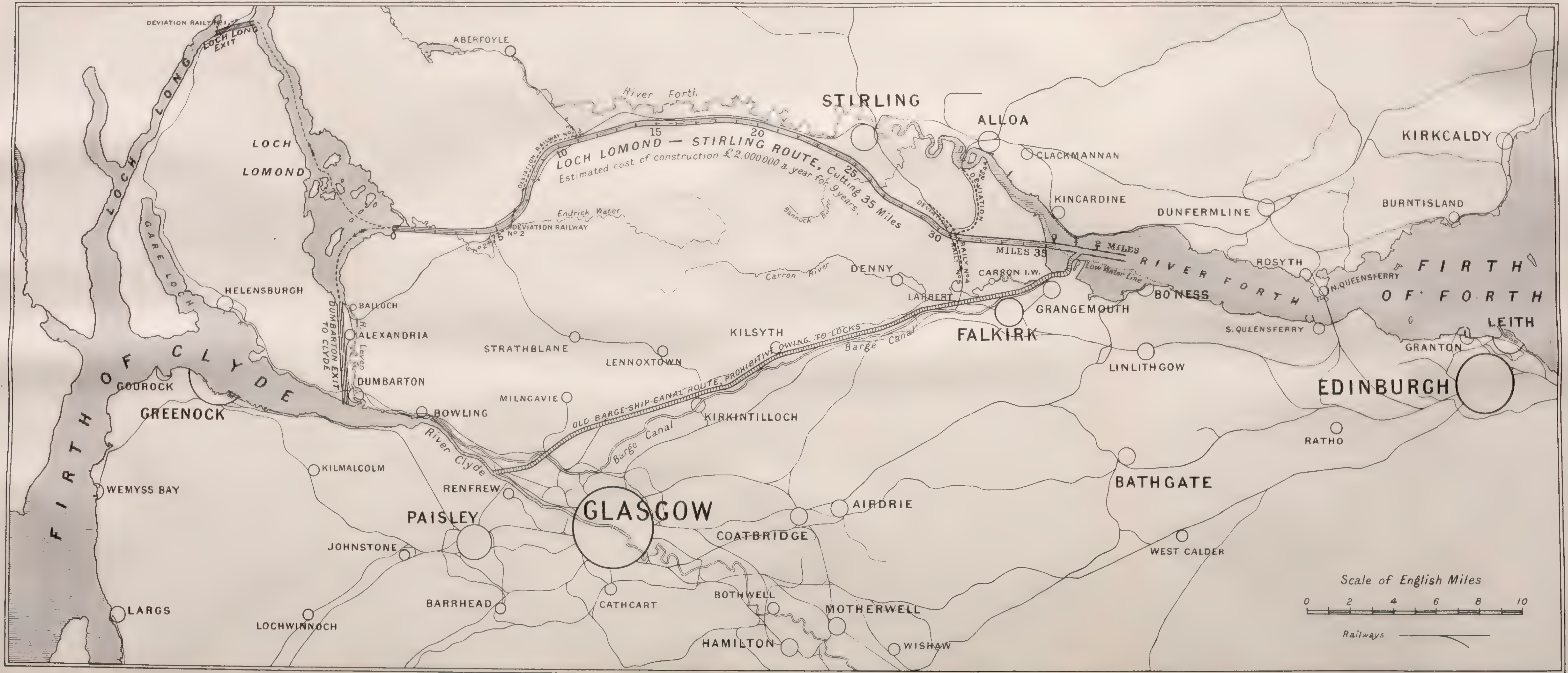
P AND

PLATE 3.

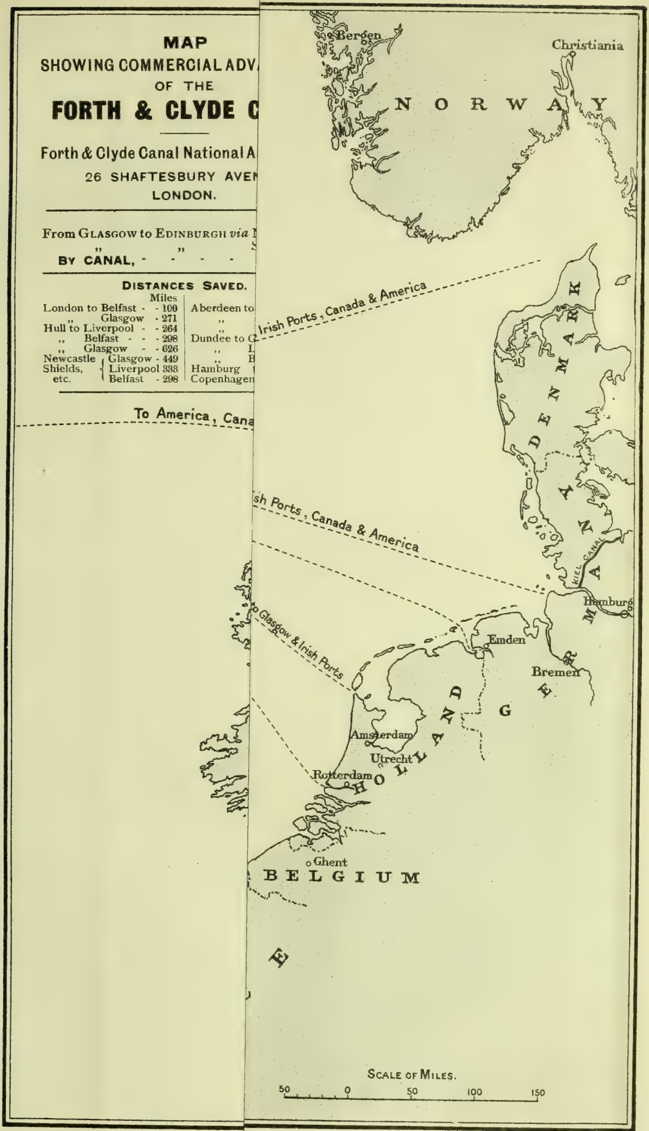


ford's Geographical Estab.t, London.

FORTH AND CLYDE BATTLE-SHIP AND OCEAN-GOING STEAMER CANAL.



Stanford's Geographical Estabt, London.



MAP
SHOWING COMMERCIAL ADV
OF THE
FORTH & CLYDE C

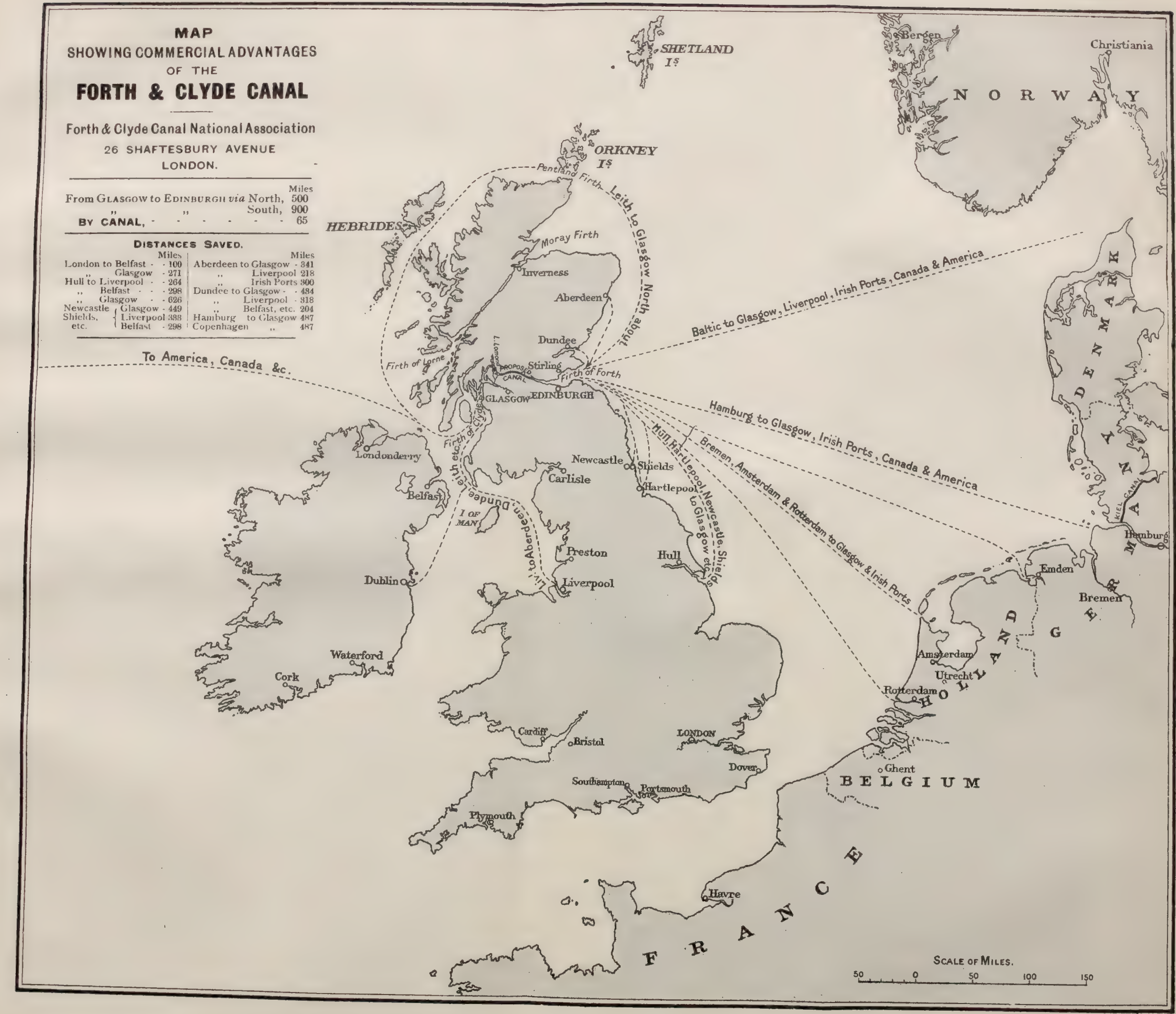
Forth & Clyde Canal National A
26 SHAFTESBURY AVEN
LONDON.

From GLASGOW to EDINBURGH *via*
" "
BY CANAL, - " - -

DISTANCES SAVED.

	Miles	
London to Belfast -	- 100	Aberdeen to
" Glasgow	- 271	"
Hull to Liverpool -	- 264	"
" Belfast - -	- 298	Dundee to G
" Glasgow -	- 626	" L
Newcastle, Glasgow -	449	" B
Shields, Liverpool	338	Hamburg
etc. Belfast -	- 298	Copenhagen

Stanford's Geog! Estab!



MAP SHOWING COMMERCIAL ADVANTAGES OF THE FORTH & CLYDE CANAL

Forth & Clyde Canal National Association
26 SHAFTESBURY AVENUE
LONDON.

	Miles
From Glasgow to Edinburgh *via* North,	500
" " South,	900
By Canal,	65

Distances Saved.

	Miles		Miles
London to Belfast	100	Aberdeen to Glasgow	341
" Glasgow	271	" Liverpool	218
Hull to Liverpool	264	" Irish Ports	300
" Belfast	298	Dundee to Glasgow	434
" Glasgow	626	" Liverpool	318
Newcastle, Shields, etc. Glasgow	449	" Belfast, etc.	204
" Liverpool	388	Hamburg to Glasgow	487
" Belfast	298	Copenhagen "	487

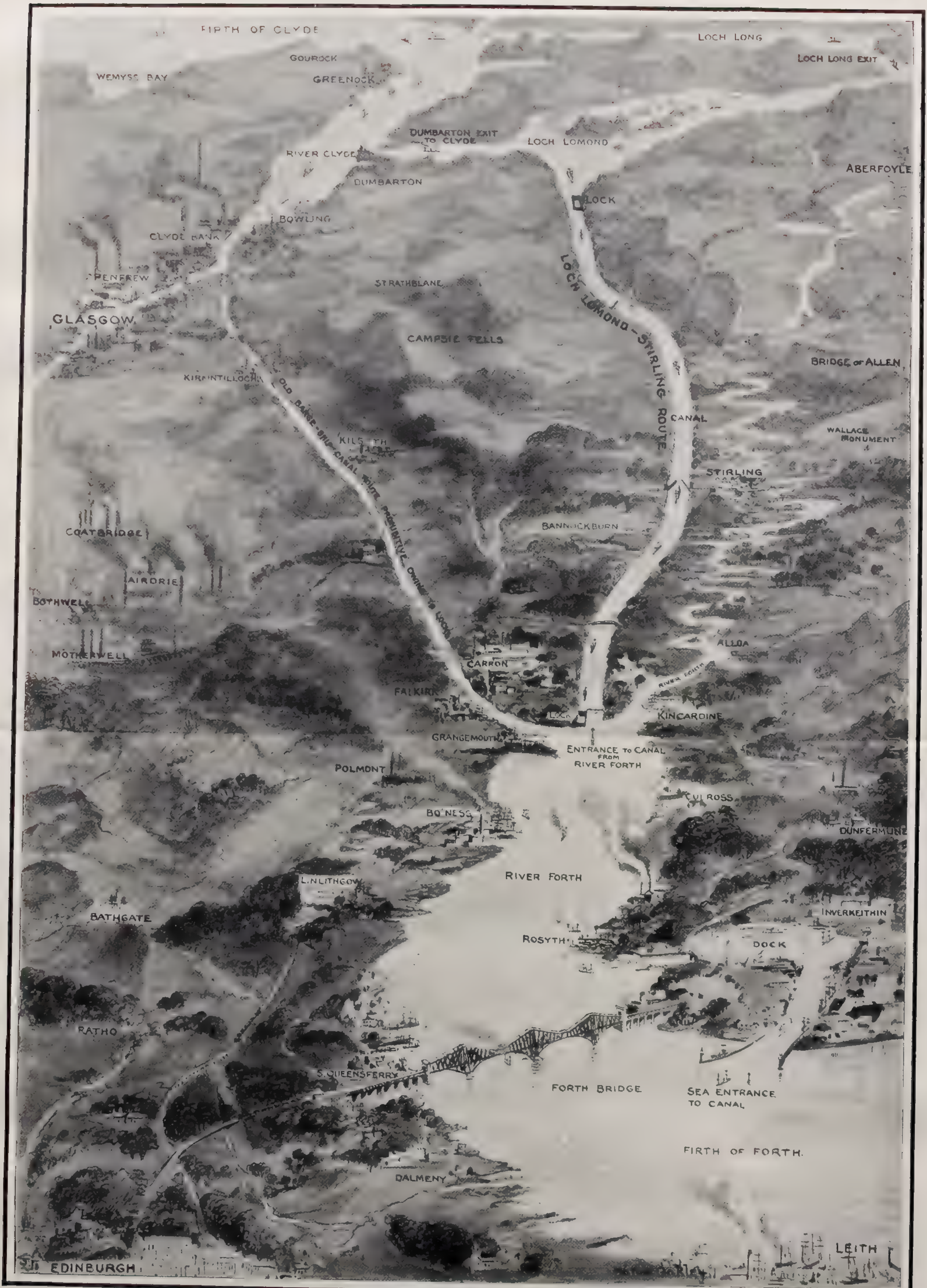
Stanford's Geog. Estabt.

REPRINTED

Ad Ship Canal

REPRINTED FROM **THE GRAPHIC**, June 12, 1909

A Great Waterway Scheme: The Proposed Mid-Scotland Ship Canal



DRAWN BY HAROLD OAKLEY FROM DESIGNS BY ADMIRAL SIR CHARLES CAMPBELL statement I made at the beginning, as to the selected route? The route advocated by the Canal Association is out at Tarbet, at the top of Loch Lomond. By and by there is not the slightest reason why a smaller craft canal should not run down the Leven, so as to get quickly into the Clyde; but as I said, there is first of all that bit at the bottom of the south end of Loch Lomond, which is not deep enough, and has a rocky bottom, which it would be very difficult to deepen by dredging. We have given up all idea of making a battleship canal by Dumbarton; it is prohibitive, in the same way as the locks and other matters are prohibitive on the high level route. Anyone who studies the subject will come to the conclusion that there is only one possible route for a battleship canal from one sea to the other, by which the ships will pass through in eight hours. Before sitting down I beg to thank this large gathering for their attendance and sympathetic encouragement, and I should like to add that I am far more indebted to the Marquis of Graham than anyone of you, because he has brought a little opposition into the matter, which has given a fillip to the discussion. In no existing institution are national questions more freely or more impartially discussed than this one; and I venture to hope that the ventilation of this important subject to-day will add one more to the many services rendered by the Royal United Service Institution to the strategical development of the national resources for defending our homes. We cannot afford to leave one stone unturned in our efforts to retain the command of the North Sea by increasing the mobility of our fleets, and I confidently state that when the strategical and commercial advantages are thoroughly grasped by the public, the possible loss of the advance of four millions sterling will be faced and the mid-Scotland canal will be constructed.

The CHAIRMAN (Lord Saltoun):—I will not detain you more than a few minutes in making some concluding remarks. The chief reason that I rise is to congratulate the gallant Admiral, as I am sure you will all do, on the excellent paper he has read; and I also think you will agree with me that the opposition which the noble Marquis has raised to the scheme has given a great fillip to the discussion, and materially assisted it. Whether, when he has further considered the scheme, he will find himself able to fall in with it or not, is a matter which, of course, must rest with himself, but no great scheme was ever suggested, and no great scheme was ever carried through without opposition of a very strenuous kind, and the greater the opposition the more honour to those who overcome it and persuade their opponents to fall in with them. It is now my duty to ask you to give a very hearty vote of thanks to the gallant Admiral for his lecture. I have no doubt that the scheme will now be aired, will go through to the country, and that we shall see what will come out of his efforts in the near future. We know that there has been an inquiry into the matter, and that a report is to be placed before Parliament. When the decision has been announced, and the report has been discussed, it will throw more light on the matter. In the meantime, I am sure that we all join in thanking the gallant Admiral, and in expressing the hope that the scheme may have the support of a very great number of his fellow citizens.

THE SPANISH SUCCESSION WAR IN SPAIN WITH SPECIAL REFERENCE TO THE BRITISH ACTION.

By J. H. ANDERSON, Esq., F.R.Hist. Soc., Barrister-at-Law.

On Wednesday, 28th April, 1909.

Major-General A. E. CODRINGTON, C.V.O., C.B., *p.s.c.*,
Commanding 1st London Division, Territorial Force,
in the Chair.

INTRODUCTION.

THIS war has been curiously misrepresented, because Sir W. Scott, Lord Stanhope, Lord Macaulay, and Professor Dyer have adopted the "Memoirs of Captain Carleton" as their authority. It may be that Daniel Defoe wrote them, or Dean Swift. They are a glorification of Lord Peterborough and a vilification of Galway, and perhaps were dictated by the former. In any case they are not historical.

Colonel F. Russell, in his "Life of Peterborough," estimated him as a hero; Colonel A. Parnell as a scoundrel; Mr. Stebbing adopts a middle view, and Mr. Fortescue follows Mr. Stebbing; but for myself I am convinced that Colonel Parnell is right. Lord Macaulay paints Peterborough as a "splendid knight-errant disliked by the Home Government"; he represents Barcelona as strong, and the earl as its captor; he talks of his daring exploits in 1705-6; he holds him out as the saviour of the city in 1706; and as doing his best to occupy Madrid in 1706, he tells us that Almanza settled the war, and that Galway, a scientific general, preferred to be beaten when acting according to rule, to winning against rule—referring to Almanza. All these statements are the reverse of the truth. The Earl of Peterborough was remarkable for foul living, atheism, boasting, and was not a professional soldier.

The real heroes were Prince George of Hesse-Darmstadt and the Earl of Galway, a Huguenot, and in the war the Germans and Huguenots did much service. Too much praise has been meted out to Admiral Rooke, whom his own Tory Government rightly deprived of command, and too little praise to the able Admiral, Sir John Leake.

The capture of Gibraltar is surrounded by legends; the sailors did not scale the east side rock, Rooke did not pull down the Spanish standard and hoist the English; the defence was good and there was no surprise, the allies losing 321 men.

Causes of the War.

The French had invaded Catalonia during the reign of our William III., and to assist the Catalans arrived Major-General Prince George of Hesse-Darmstadt, who became very popular, and at the close of the war was named Viceroy of Catalonia. The King of Spain, Charles II., had two possible successors—the Austrian Archduke Charles, and the Bourbon Philip duc d'Anjou. The Austrian was preferred by Catalonia, the Bourbon by Castile. In 1700 Charles II. died, devising Spain to the Bourbon, and Louis XIV. accepted Spain for his grandson with the words: "Il n'y a pas de Pyrénèes."

This led to the Spanish Succession War (1702-13), in which England, Holland, and the Emperor opposed France. The guiding spirit of the allies was Prince George, who had been deposed from his Viceroyalty, and who now suggested an expedition against Cadiz, the great naval arsenal of Spain.

The Expedition to Cadiz, 1702.

In July the fleet of 50 English and Dutch sail of the line and 100 transports, under Admiral Rooke, carrying 10,000 English and 4,000 Dutch troops, under the Duke of Ormond, sailed from Spithead, accompanied by Prince George. In Cadiz the Spaniards had 9 regiments of foot, 1,000 horse, and some militia; the works were fairly strong, and in the bay were 7 French men-of-war and 8 galleys protected by a chain boom. Along the coasts were numerous batteries. On approaching, Ormond urged immediate assault. Rooke differed, and the general unwisely gave way. Five days then passed in landing the troops north of the city, and they actually plundered some churches, Lieut.-General Sir H. Bellasis sharing in the loot; this had a bad effect. Ormond next opened a weak fire on one of the outlying forts; but the fact is that Rooke preferred bombardment to assault, and in reality, having the gout, wanted to go home. Prince George prevented the bombardment, but could not prevent the re-embarkation of the entire force.

Ormond and Prince George then wanted to winter in Spain, so as to encourage the Spanish partisans of Charles, but Rooke insisted on sailing home.

The Affair at Vigo, 1702.

On the way, Rooke learnt that a French fleet, convoying treasure, had arrived at Vigo, and with unusual vigour sailing to that place found the enemy protected by a boom and by land batteries. On 23rd October, Ormond, landing south of Vigo, carried the land batteries in that quarter, whereupon Rooke's vessels broke the boom and fell on the French vessels, of which half were captured and half burnt to avoid capture. Again Ormond wanted to take Vigo and winter there; again Rooke objected, and the fleet sailed home.

In 1703 Portugal, owing to Prince George's exertions and Mr. Methuen's skill, joined the allies, as also did the Duke of Savoy.

In 1704, on 7th March, King Charles III. of Spain (*i.e.*, the *Archduke*), with the Prince as Commander-in-Chief, and with 188 vessels and transports and 10,000 troops, reached Lisbon. Portugal, being unprepared for war, a defensive on land was decided on, whilst by sea the Spanish coast fortresses were to be assailed.

The Fall of Gibraltar, 1704.

The expedition under Prince George was to include 5,000 troops, but Admiral Rooke, erroneously thinking the French were besieging Nice in Savoy, would not wait for the Portuguese, and on 8th May left Lisbon with 49 English and Dutch sail of the line and smaller vessels, carrying 1,900 English marines, 400 Dutch marines and 70 Catalans. Prince George's brother Henry accompanied the force. Sailing up the east coast of Spain, Rooke learnt that Nice was not besieged, and at once returned, meeting near Lagos, on 27th June, Admiral Sir C. Shovel with 23 sail of the line. With such strength Rooke could have seized Cadiz, as he was urged from Lisbon to do; he declined, and instead cruised about west of the Straits.

At the end of July, knowing something was expected of him, he did agree to the Prince's suggestion to attempt Gibraltar. On 1st August the fleet neared the Rock and the Prince landed on the isthmus with the land forces but no guns. He thus cut all connection between the Rock and the mainland. The garrison numbered 80 Regulars and 470 militia, on whom the allied fleet opened fire from the west, and on Sunday 3rd August, the defenders' batteries were mostly silenced, and the sailors, landing, carried the New Mole Fort. The Governor then capitulated, and the place was occupied for Charles III.

The Next Event was the Battle of Malaga, 24th August.

Rooke, cruising east of Gibraltar, fell in with a French fleet of 50 sail of the line. After an indecisive action Rooke returned to Gibraltar, where he gave the Prince men and stores, and then made for home, leaving 16 vessels under that first-class Admiral, Sir J. Leake, at Lisbon. The capture of the Rock was little regarded in England.

Campaign in Portugal, 1704.

The allies were 6,500 English, under the Duke of Schomberg, 3,500 Dutch, and 20,000 Portuguese. In May the field troops were partly in South and partly in North Portugal, all the English being in the former and all the Dutch in the latter. Against them moved a first-class defensive General, the Duke of Berwick, with 28,000 men. He directed his right into North Portugal, his centre and left on both sides of the Tagus into Centre and South Portugal.

On 4th May Berwick advanced, driving the Dutch back on Abrantes on the Tagus, whilst Schomberg, in face of Berwick's left, remained inactive south of that river. North of the Tagus, however, 9,000 Portuguese, under the vigorous Das Minas—70 years old—pushed the French right south on the river. But there now moved against him Berwick's centre, which drove him northwards. Soon afterwards the operations closed owing to the summer heat and to the breakdown of the French horses.

In August a new English General appeared, chosen by Marlborough, the able Huguenot, Henry de Ruvigny, Earl of Galway. He assembled in north Portugal, and vainly urged the defensive on the ground of Portuguese unpreparedness. In October the allies attacked Berwick near Ciudad Rodrigo, were repulsed, and the campaign ended, Berwick himself returning to Paris.

DEFENCE OF GIBRALTAR, 1704-5.

Prince George had a garrison of 2,440 men, and on 24th August 12,000 French and Spanish, with 40 guns and 12 mortars, began the siege, with a fleet at Cadiz to help them, which, however, did not prevent Admiral Leake from Lisbon sailing in with stores and ammunition. After heavy firing the Bourbon General, on 10th November, tried a night assault on the steep eastern side, but it failed. The fire, however, made breaches, and left only 1,000 effectives in the garrison, when fresh help came (in a fleet) from Galway at Lisbon. This enabled the Prince to deliver two successful sorties.

In 1705 (7th February) another assault failed, and soon afterwards the French Marshal de Tessé arrived to take command, and resorted to bombardment. In April Tessé turned the siege into a blockade, and by 28th April he retired, the defence, of which Prince George was the very soul, having lasted eight months.

THE SIEGE OF BADAJOZ, 1705.

From Portugal 17,000 English, Dutch, and Portuguese, commanded for alternate weeks by Galway, Fagel, and Corsana, moved into Spain against Badajoz, but soon retired into summer quarters owing to the heat and to the arrival of Marshal de Tessé.

In the autumn the allies again threatened Badajoz, but the arrival of de Tessé and the serious wounding of Galway led to the invaders withdrawing into winter quarters, as also did the French. Galway, being in a grave condition, the French Marshal allowed him to enter Spain, and sent him his best surgeons.

Barcelona, 1705-6.

The Catalans were ready to espouse the Austrian cause, and if Prince George had not been a Roman Catholic he would have led the English troops. The post was given by Marlborough, on the advice of his Duchess, to Charles Mordaunt, Earl of Peterborough; the Admiral was Sir C. Shovel, with whom Peterborough held joint naval authority.

The fleet included 66 English and Dutch sail of the line, and 6,500 English and Dutch troops. At Lisbon Galway added two dragoon regiments (dragoons were musketeers fighting either on horse or on foot) and some Catalans, and King Charles III. came on board. The expedition then touched at Gibraltar, where the raw troops went into the fortress and the 3,200 veterans stationed there joined the fleet, as also did Prince George and Prince Henry. On the voyage Peterborough tried to induce Charles to make for Italy; the King declined.

On 22nd August Barcelona was sighted, and a landing was effected north of the place, 1,200 miquelets (militia) joining. Barcelona, not a strong fortress (Fortescue calls it "formidable"), was defended by a wall, a ditch, a covered way, and a glacis. On the south-western side, 1,100 yards off, lay the fort of Montjuic on a hill 700 feet higher than the city. This fort was weak, and was by no means the key of Barcelona.

Peterborough was dead against the siege, but was overruled, and the allies encamped north of the place, the cowardly and jealous Earl obstructing operations as much as he could. The garrison numbered 4,000 Spaniards and Neapolitans; the allies numbered 10,000—two-thirds English—plus a powerful fleet with 24,000 seamen and 3,500 heavy guns, and 3,000 miquelets, and a population favourable.

This superiority was almost neutralised by Peterborough, who wanted to enter Valencia, and thence march on Madrid, or else to sail to Savoy, with whose Duke he had some understanding, though all this was clean contrary to his orders. (Fortescue suggests that Peterborough and Marlborough both held that Spain could be saved only by attacking France from Italy.) At last he got the Valencian project adopted, when the Prince induced him, as a last effort, to agree to an assault on Montjuic.

The storming party under the Prince consisted of 400 grenadiers, 600 musketeers, and 1,300 reserve. On 13th September, at 6 p.m., they started from St. Martin westwards, and then circled round towards Montjuic, but they did not reach the fort till daylight on 14th September, 1705. The

Neapolitan garrison saw the column, which on approaching found the ladders too short, and, worse still, 200 of the enemy issued *viâ* Fort St. Bertran from Barcelona to help Montjuic. The Prince then took 400 men to seize this Fort Bertran in order to stop this reinforcing. On the way he was mortally wounded, and thus fell the hero of the Austrian cause. The officers had great difficulty in retaining the men before the fort. Soon afterwards Peterborough, to whom Fortescue gives great credit at Montjuic, came up with the reserve, and some Catalans carried Fort Bertran. After gun-fire had exploded the defenders' powder and created a breach, the garrison surrendered on 17th September, and on 14th October Barcelona capitulated, with the result that all Catalonia, except Rosas (close to France), declared for Charles III. After this, Peterborough did much harm by his hostility to what he called "the Vienna crew" and by his scattering his forces all over Catalonia.

Meantime all Valencia declared for Charles, except Alicante on the coast, and Peterborough thereupon betook himself with some forces to the pleasure-loving city of Valencia, near which place he in an hour turned Barrymore's Foot into Pearce's Dragoons.

BOURBON EFFORTS TO RE-TAKE BARCELONA, 1706.

Louis XIV. of France directed Tessé to march from the Portuguese frontier eastwards to Barcelona, gather troops in Roussillon and a fleet at Toulon. This bold plan of concentrating on the city was much facilitated by Peterborough's folly in withdrawing to Valencia 5,000 of his troops. Even in the city itself only 1,400 men remained.

By 3rd April the French forces and fleet concentrated at Barcelona, and the French siege lasted from 4th April to 8th May. The garrison, under King Charles, numbered 3,600 allied Regulars, 1,500 miquelets, and 5,000 citizens. The works had been improved since 1705, and an entrenchment constructed between Barcelona and Montjuic. The besiegers, 21,000 French, quite surrounded by miquelets, relied for supplies solely on their fleet.

After a fierce assault the fort of Montjuic fell on 21st April; then arrived Peterborough from Valencia with 600 (Fortescue says "3,000") dragoons in the rear of Marshal Tessé. His advice to Charles was to esçape in a boat; the King declined, and on 8th May Admiral Leake came in relief.

This relief was thus arranged; 5,000 English troops for Catalonia reached Leake at Lisbon, and he on the voyage, hearing of the French siege of Barcelona, and in spite of Peterborough's orders (as admiral) to land the forces on the Valencia coast "in order to march to Madrid," carried all of them to Barcelona, whilst the Earl did practically nothing outside Tessé's lines (Fortescue denies this), though he did board Leake's ship just south of the city, and did try to figure as the saviour of the place. Tessé then retired northwards into France.

Galway's March, 1706.

Tessé having gone eastwards, Galway suggested a move from Portugal on Madrid. The allies near Elvas numbered 19,000, and opposed to them was the Duke of Berwick with 15,000 Spaniards. The allies, driving the Marshal before them, passed through Alcantara on the Tagus, Ciudad Rodrigo, Salamanca, and over the Sierra Guadarama. At Madrid Berwick and King Philip had 14,000 men, but they evacuated the capital and retired north-east, and on 27th June Galway entered Madrid—a splendid feat for a general infirm, a Huguenot amidst Catholics, and in a district strongly Bourbon. Then was the moment for King Charles to appear, but he did not, and Galway, having stopped 14 days in Madrid, moved against Berwick, who had been reinforced by French troops up to 25,000—one-half French—whereas Galway had but 12,000. King Charles' chance had gone.

King Charles III. and Peterborough.

I must now explain King Charles' movements. After Tessé's defeat, the King, on Peterborough's advice, decided on the Valencian route to Madrid. Consequently 8,000 men were concentrated at Valencia city, including the earl and nearly all the English; but it then became apparent that Peterborough had made no preparations for a march on Madrid, and, worse still, he scattered his men all over Valencia. Charles therefore moved *viâ* Saragossa, and though the earl by 4th July knew this, and that Galway was at Madrid, he delayed his own march westwards, and finally it was 6th August before the King and Peterborough (the latter bringing only 400 dragoons) met Galway north-east of Madrid. Four days afterwards Peterborough, with 80 dragoons, went *viâ* Valencia *en route* for Genoa in order to raise money for the allies: really to see the Duke of Savoy and to indulge in pleasure—in fact, he deserted. He did no more in Spain, and was recalled in 1707 by the indignant Marlborough; he was charged with disobedience and embezzlement and died in disgrace.

The arrival of Charles and Peterborough had raised Galway to 15,000, but Berwick was still superior, and indeed retook Madrid, entirely cutting Galway's connection with Portugal.

Events in East Spain, 1706.

Meantime Admiral Leake had captured Carthagena, Alicante and the Island of Majorca, and Galway also fell back eastwards, followed by Berwick, the former going into winter quarters in Valencia, the latter in Murcia, after retaking Carthagena.

Events in 1707.

A fleet under Admiral Shovel, with 8,200 men under Earl Rivers, arrived at Alicante to reinforce Galway. King Charles

III. should then have concentrated and again entered Madrid; but with fatal results he marched off to Barcelona with many Spanish and Dutch troops, leaving Galway in Valencia. Earl Rivers in all ways thwarted Galway, and was soon recalled.

Galway, thus having only 15,500 Portuguese, English, Dutch, Huguenots, and Germans, decided to move on Madrid, but previously to destroy Berwick's magazines at Yecla in Murcia, which he did on 10th April. He knew that 8,000 French, under the Duke of Orléans, would soon reinforce his opponent, whom, with great daring, he therefore at once attacked, though Berwick had 25,000, half French, and he himself only 15,000, half Portuguese, one-third English, one-sixth Dutch, Huguenot and German.

BATTLE OF ALMANZA, 25TH APRIL.

As usual, Berwick placed his foot in the centre, Spanish horse on the right, French horse on the left; Galway had most of his foot in the centre, the rest interspersed amongst the cavalry on his wings—unusual tactics. The Portuguese were on the right. I have no time for details. Briefly, the Bourbon foot were routed; the Portuguese horse on Galway's right grossly misbehaved and allowed the French horse to play a decisive part, and Galway himself was desperately wounded. The result was a total defeat for the allies with a loss of 20 Portuguese guns. The English did not lose their guns, as so often stated. Lord Macaulay exaggerates the effect of this battle, which was by no means fatal to the allies' cause.

Galway then retired into Valencia, and with all his cavalry marched north to Tortosa in Catalonia, where he arrived on 19th May. Berwick, having captured Valencia city, followed Galway to Tortosa, and then moved up the river Ebro towards Saragossa. In Valencia the French were generally successful, except that they failed at Denia before the splendid defence of the Spaniard, Ramos. This siege is hardly mentioned in most accounts.

In Arragon Berwick and Orléans were entirely successful, and prepared to enter Catalonia. To do this, Lerida must be captured, and to save it Galway collected 14,600 men—such was his energy. In September, Orléans invested Lerida with 23,000 French troops. The Governor, Prince Henry, and the garrison of 2,600 offered a stern resistance, but as the town lay on the farther (western) side of the River Segre, Galway could not assist, and the place fell on 14th November. The combatants then went into winter quarters.

EVENTS IN 1708.

As the French had been expelled from Italy it was easier to transport to Spain German than British soldiers. Galway therefore—now blind in one eye and partially deaf—was superseded by Field-Marshal von Staremberg, a soldier second only to Prince Eugene, whilst the British contingent would be under General Stanhope. Galway became Commander-in-Chief in Portugal.

In May, 1708, Staremberg had in Catalonia 10,200 men, 2,000 being British; Orléans, with 22,000, in July captured Tortosa. Staremberg was then reinforced to 16,000, whilst the French had to detach to deal with Marlborough in Belgium. Both sides then went into winter quarters.

At sea in 1708 Admiral Leake captured Sardinia and Minorca. This was the last success in this war of this able leader. These islands, and especially Minorca, were a fine base for the allies, and Minorca might now with advantage be exchanged for Gibraltar.

This year saw the capture of Denia by the French, together with Captain George Carleton, the supposed author of certain memoirs already alluded to. Finally in the spring of 1709 the last of the allies' fortresses in Valencia, Alicante, was taken, mainly because Admiral Byng at Minorca, and Stanhope at Barcelona, gave no real help.

EVENTS IN 1709.

The Portuguese, aided by Galway's 2,800 British, moved near Elvas, and were worsted by the Spanish Bourbon leader in the combat of the Caya. In Catalonia Staremberg maintained his position, and at the end of the year nearly all the French forces were recalled from Spain.

EVENTS IN 1710.

King Philip of Spain, with a Spanish Bourbon army, manœuvred against Staremberg, who finally beat him at Almenara, and again at Saragossa. The allies then decided to move on Madrid, which Charles III. entered on 28th September. King Louis XIV., on hearing of the above battles, despatched Marshal Vendôme to Spain. He passed with 10,000 horse and 15,000 foot through Navarre, Valladolid, Salamanca, and thence up the Tagus towards Madrid, where Staremberg had only 17,000 men. The fact is, that the allies should not have occupied the hostile capital; they should have throttled the French invasion in Navarre. The Austrian therefore retired north-eastwards, Vendôme occupying Madrid.

In this retreat the rearguard was formed by Stanhope's British troops, and on 6th December they quartered at Brihuega, 14 miles behind the main body, and separated from it by the River Tajuna. Stanhope posted no picquets; he numbered only 2,500 men, and his isolated position was due to his own wish (Fortescue denies this). Vendôme, with accurate intelligence and covering 170 miles in seven days, pursued, and on 9th December completely surrounded Stanhope in the town. After being fiercely assaulted, and finding his ammunition failing, and no signs of Staremberg, the British general capitulated. Half an hour afterwards Staremberg appeared.

The Austrian Commander then took up a position at Villa Viciosa, north-east of Brihuega, with 14,000 men, mostly Germans. Here, on 10th December, Vendôme attacked with 20,000 men, mostly Spaniards. He placed cavalry on the flanks and infantry in the centre; Staremberg's dispositions were similar. The battle opened with much artillery firing. The Bourbon cavalry routed the Austrian left, and then turned on the rear of the Austrian foot. The Bourbons, however, did not succeed on their left and in their centre, and ultimately Vendôme retired. It was but a barren victory for Staremberg, who had no food, whose men were exhausted, and who heard of Stanhope's capture. He consequently retreated through Saragossa to Barcelona, followed by Vendôme. Thus had the skill of Vendôme given the Spanish crown to the Bourbon Prince.

In 1711, 1712, and 1713 no military event of importance occurred; but in 1713 political changes--to which refer Hallam's words: "The fate of Europe was changed by the cunning of one waiting woman and by the insolence of another; nor would the Bourbons have reigned beyond the Pyrenees but for Sarah and Abigail"—closed the war by the Peace of Utrecht, by which Spain (excluding Gibraltar and Minorca) went to King Philip V. The great blot on this treaty was the British desertion of the Catalans, to whom we had guaranteed their *fueros*.

COMMENTS.

(1) Cavalry were the most important arm; (2) constant disagreement between Admiral and General, and evil effect of divided command; (3) great effect of a hostile or a favourable population; (4) importance of fortresses, which in those days of slow-moving armies were probably of the value assigned to them. We note that the armies are regarded as subordinate to them, as they invariably were till the era of Napoleon, *e.g.*, in 1710 the allies preferred to occupy Madrid to mastering Navarre, which last would have throttled the French invasion; (5) Unusual tactics of Galway at Almanza; interposing of cavalry and infantry had been done by Gustavus Adolphus; it was condemned by Napoleon; (6) winter—and summer—quarters; (7) absence of picquets at Brihuega; (8) Bourbon cavalry tactics at Villa Viciosa the same as Oliver Cromwell's.

The CHAIRMAN (Major-General A. E. Codrington, C.V.O., C.B., *p.s.c.*): —As no one rises to offer any remarks, it only remains for me to ask you to express your sense of thanks to Mr. Anderson for his very interesting and instructive lecture on, I think, a rather forgotten campaign. At the time of this war there were other campaigns going on under Marlborough in Flanders, and most of the attention of people who have studied military history has been attracted more to them than to these very important operations in Spain. The history of the campaign, and the facts connected with it, have been extremely ably set before us by Mr. Anderson, and I am sure you will support me, therefore, in giving him a hearty vote of thanks.

ARTILLERY SUPPORT OF INFANTRY.

By Major E. M. MOLYNEUX, D.S.O., 12th Cavalry
(*Inspecting Officer, Imperial Service Troops*).

"FIRE is the great, the principal, and almost the only, force in battle; the shock is only a secondary incident. All efforts ought to turn towards the good employment of fire. . . We are compelled to deduce this consequence: that the rational tactical disposition consists in augmenting the effects of the fire on the enemy, whilst sheltering oneself as much as possible from that of the adversary."—General Lewal, "*Etudes de Guerre.*"

The above is practically only an amplification of the well-known saying of Napoleon: "Fire is everything, the rest is of small account"—a saying which, if true in the days of Napoleon, must apply with far greater force to-day. And it should not be forgotten that the author of that saying habitually employed shock tactics with a boldness and success unsurpassed in modern war. The combinations of fire which produce the maximum of effect form a study second to none in importance, and are worthy of the most serious attention of every student of the art of war.

In dealing with this subject, I have found it convenient to treat it under the following headings:—

1. A consideration of the conditions which make such combinations of fire both more essential to success and more difficult of attainment than was formerly the case.
2. A review of the various methods at our disposal for effecting such combinations with the reasons which make them suitable or otherwise for our purpose.
3. A description of the methods which, in the opinion of the writer, offer the prospect of the best results under the most varied conditions of weather and terrain.

I.

Up to the middle of the 19th century the difficulty of supporting infantry by artillery fire was hardly felt, and could not accurately be described as a problem involving any special complexities. Indirect fire, except in siege warfare, was hardly thought of; the ranges of artillery were so short that the guns, if their projectiles were to reach their objective at all, had to be fired from positions from which the commander of the artillery could watch the hostile lines of infantry approach and meet, and where his own eyesight, aided, if necessary, by a field-glass, was usually quite sufficient guide to enable him to render the maximum of support to his own infantry. This he could do from a distance at which artillery would cease to exist in a few moments to-day; for, short as was the range of artillery, that of the infantry firearm was still more restricted.

The fact that the concealment of either infantry or artillery by employment of cover when actually in action, or scientific adaptation of uniform to background was not then studied, removed another of the greatest difficulties with which we have to contend now. The densest of formations and the most conspicuous of uniforms, at distances well within the range of modern rifle fire, gave the gunner a target for the destruction of which quickness, tenacity and courage were the principal qualities required. But the advent of rifled firearms, of ever-increasing accuracy and range, followed more recently by the introduction of smokeless powder, have made the support of infantry by their own artillery one of the most difficult questions of modern war. The disadvantages at which infantry found themselves when unsupported by artillery against a stubborn resistance, even though the latter might be equally unprovided with guns—though experienced in earlier wars — attracted general attention in the Franco-Prussian war, after which it became an axiom that an infantry attack should not be launched until the defence had been shaken by what was called an "artillery preparation." This theory held the field until the days of Colenso and Pieter's Hill, when it became evident that it required considerable modification; this modification being required not because the theory of preliminary bombardment was in itself unsound, but because changed conditions had added so much to the difficulties of carrying it out effectively that the process, at any rate in its crudest form, no longer attained its object. Thoughtful observers had already come to the conclusion that to merely concentrate an overwhelming artillery fire upon a position and then to cease the artillery fire as the infantry were launched to the attack would no longer prove sufficient, in spite of undeniably decisive results often achieved by it formerly. The increased difficulties of reconnaissance, the enormously greater extent of positions occupied, the difficulty of locating hostile artillery no longer perched where it would be expected, open to inspection on the brow of some commanding eminence but carefully concealed and probably using indirect fire as well as smokeless powder, less conspicuous uniforms, the more universal use of cover due to the absence of close formations in the vicinity of the firing line, longer ranges, and the consequent increased difficulty of seeing any target or observing the effects of fire upon it, even if it had been as conspicuous as of old; these are some of the changed conditions that have made the "preliminary preparation"—though as desirable as ever when feasible—seldom possible. The improvement in the range of firearms is relatively far greater than that in modern field glasses and telescopes; these latter—except in field of sight

—are not very much superior to the best in use in the Napoleonic period; and difficulties due to atmospheric causes and to cover and terrain are, of course, exactly as during previous ages.

As early as the Russo-Turkish war of 1877-8 we find a close observer of that campaign indicating the difficulty of supporting the attack of infantry, "thanks to the violent fire of quick-loading guns and to the mass of cartridges which the enemy had at his disposal, which enabled him to cover the ground in front of his works as far as a distance of two versts with a hail of lead."[1] The same observer, in summing up the results of his observations, expresses himself as follows:—

"Whether this (preliminary) bombardment accomplishes any good purpose, or whether it is preferable to make the attack during the night or at early dawn without giving any warning by the use of artillery, has received very little elucidation in the recent war. At Plevna, after three days' bombardment by artillery four times superior in number to that of the Turks, the Russians were defeated in an assault with terrible losses."[2] He goes on to give instances to the contrary as well, showing how sometimes under certain circumstances the artillery preparation paved the way to success; but the general conclusion drawn is decidedly adverse to this employment of artillery, which was relied on by the Russians in 1877-8 and by ourselves at the beginning of the recent Boer war, as being in accordance with the German practice founded on the war of 1870-1. "Unlike the war of 1870, where the superiority of the Prussian artillery contributed very materially to the success of the campaign, in the war in Turkey the Russian artillery, although greatly superior in numbers to that of the Turks, played but a minor part. At the battle of Telis (28th October) its shrapnel compelled the surrender of a small redoubt and 3,000 men without the necessity of an infantry assault; at the battle of Lovtcha (3rd September) it so demoralised the enemy as to greatly assist the success of the subsequent assault. It also did good service at the battle of Aladja Dagh in Armenia. With these few exceptions it contributed to no victory and averted no defeat. It consumed several thousand tons of ammunition, transported with enormous difficulty and expense; it hammered away at earth works for weeks at a time without producing any substantial result, and the total losses inflicted by it were probably but little over 1 per cent. of those inflicted by the infantry."[3]

No fighting on any considerable scale between civilised nations with artillery on each side took place between 1878 and 1899. The next war which helps to throw light upon this problem is the war in South Africa. The opinion of the majority of competent observers reiterates the opinion expressed above: that the powers of artillery, if used as a preparation for instead of as an adjunct to the infantry attack, are usually almost wasted on a resolute and skilful adversary. What came under my personal observation during that war certainly leads to the same conclusion. At Vaalkrantz, for example, the long and furious bombardment of the Brakefontein position, selected for attack, by an overwhelmingly superior artillery—as far as I remember, writing "without the book," we had 78 guns in action, including naval guns, against 9 of the Boers—produced no very appreciable effect in shaking the defence; and from what we gathered later on from our adversaries on that occasion, the actual losses inflicted by the artillery fire were quite trifling. Yet the intensity of the fire of an overwhelmingly powerful artillery was such that the still green grass (it was the beginning of February) was scorched to such an extent that eventually, after several hours' incessant bombardment, it took fire, and the whole boulder-strewn surface of the hill blazed. At Pieter's Hill, three weeks later, precisely the same results were shown. In each case, the enemy tell us, the terrific "artillery preparation" obtained the most meagre results, even in demoralising the defence. The successes won on Pieter's Hill were won by sheer hard infantry fighting; the tactics of the artillery were already too antiquated to be of the assistance that our infantry expected. Instances might be multiplied. I mention these two as they came very prominently under my notice. The artillery, in addition to this preparation, attempted to support the infantry at the actual moment of the attack; but from lack of proper equipment for co-operation at long ranges—a subject to which I return later—their support was inadequate, and frequently dangerous to our own infantry. This was noticeably the case at Pieter's Hill and at Botha's Pass. There is so much that is admirable in our military traditions—and in none is this more the case than in the Royal Artillery—that we are apt to become somewhat jealous of innovation. The same applies to all Armies with fine military traditions. "Military conservatism, like a cuirass, is impenetrable to anything except an actual bullet."[1] Possessing, as we do, rifled guns whose fire at the longest ranges is practically as accurate as at the closest, we have to ask ourselves whether the traditions of close and self-sacrificing support by artillery, glorious as they are, should not be modified in accordance with the imperative demands of the newer conditions. "Whenever we find that the conditions have so changed that the evidence is no longer good, it must be ruthlessly rejected. All modern circumstances must be carefully taken into account. No maxim or tradition ought to be allowed to stand simply because it was applicable formerly."[2]

---

[1] Lieutenant F. V. Greene, U.S. Military Attaché at St. Petersburg. "The Russian Army and its Campaigns in Turkey in 1877-8."

[2] *Ibid.*

[3] *Ibid.*

We are proud, and justly proud, of the grand spirit of devotion to duty which animated our gunners at Sanna's Post, and are confident that should it ever be called for again in the same form it will still be there. The heroism of Colonel Long's gunners at Colenso, who unhesitatingly sacrificed themselves in according to the infantry what they conceived to be the most useful form of support, can arouse nothing but admiration.

---

[1] Sir Ian Hamilton: "A Staff Officer's Scrap-book."

[2] "Wellington Prize Essay," 1872.

But we have a totally different feeling regarding the tactics of those who sent them to be shot down in attempting the impossible. Even were it true that a less adequate support is given at long than at close ranges—and, given proper equipment and full instruction in its use, the longer range fire may, from its more vertical angle of descent, be even more formidable—the fact still remains that "a live dog is better than a dead lion." *C'est magnifique, mais ce n'est pas la guerre* applies as truly to the artillery at Colenso as to the Light Brigade at Balaclava. Though most of our fighting has been, and probably will continue to be, against enemies unprovided with modern artillery, who can never be a real danger to the existence of the Empire, and against whom dashing and energetic action will prove quite as efficacious as more scientific tactics, yet we must never lose sight of the fact that our small army must be trained to the highest level of efficiency for a possible contest with a well-armed European foe, numerically far more powerful than ourselves. And our artillery is practically irreplaceable. "Small wars against ill-armed and ill-organised enemies are often positively harmful, for they tend to inculcate a contempt for strategy and scientific tactics. . . . . Our Army ought to make the fullest possible use of all the advantages that a highly-developed civilisation can put into its hands."[1]

Turning now to the conclusions to be deduced from the last and greatest war of modern times, the combatants in this case were more evenly matched, and both were Regular Armies on the accepted model. The contention that "the conditions were abnormal"—by which every unpalatable deduction from South Africa was assailed—is less likely to obtain a hearing.

One of the most distinguished and capable of French soldiers expresses himself in these words on this point: "First of all, we must frankly accept the fact that the lessons taught by the South African war have not only proved themselves to be of undeniable cogency, but have assumed a form so abundantly corroborated in detail as to become conclusive."[2] And the moral which he draws is that of the author of " The *Times* History of the War," quoted above. General de Negrier considers that "We have no right to run the risk of again exposing our soldiers upon the field of battle with out-of-date equipment and obsolete tactical methods."[3]

The following expressions occur in Sir Ian Hamilton's " Staff Officer's Scrap Book" : "It is patent—obvious, glaringly obvious—that these (Japanese guns) have not a chance in the fair open field against the Russians." (Vol. II., p. 190.) " The poor old Japanese batteries are being simply smothered. . . .

---

[1] L. S. Amery: "The Problem of the Army."

[2] General de Negrier: "Lessons of the Russo-Japanese War."

[3] *Ibid.*

This is an exemplar of the weakest point of the Japanese—their weakness in artillery." (Vol. II., p. 195.) "I cannot tell the number of guns in action on either side, but certainly those of the Japanese were the most numerous. In spite of this advantage the Russian artillery slowly wrested back its superiority until the fire in support of the attack again became spasmodic and feeble as heretofore." (Vol. II., p. 203.)

In agreement with practically all other observers, General de Negrier considers that "the Russian artillery was perceptibly superior to that of the Japanese,"[1] and attributes the better success of the inferior artillery largely to their grasp of the fact that "invisibility has become an essential condition; this is the dominant fact of the whole war."[2] In Sir Ian Hamilton's account of the battle of the Yalu, we find a detailed description of the care taken by the Japanese to hide their guns: "Every advantage was taken of the natural lie of the ground, and much artifice employed to conceal the position from the Russian gunners on the north side of the river. Trees were transplanted a short distance in front of the batteries to hide the tell-tale flash of discharge, and were carefully chosen from amongst those which were growing either directly in front or directly behind the entrenchment which was to be concealed. The next morning the landscape appeared unchanged from the Russian side of the river, as the fact that a tree of a particular shape had advanced or retired 200 or 300 yards during the night was naturally imperceptible. . . . When all had been done that could be done to ensure concealment, then all was done that could be done in the time to ensure safety if concealment should fail."[3] The sequel to the above may be found a page or two further on in the same account: "The Russians never had a chance; but just for the first ten minutes the *rafale* of their Q.F. artillery enabled them to look dangerous to the anxious headquarters staff and infantry looking on at a distance. After that, not only the overwhelming superiority of the Japanese in batteries and in weight of metal, but also all their careful preparations told with crushing effect. The Japanese were invisible and comparatively invulnerable; the Russians were conspicuous and everywhere most vulnerable. In thirty minutes the Russian guns were silenced."[4] So far, however, from playing a minor part on account of its distance from its objective and concealed position, the contrary was the case with the artillery on both sides. It is instructive to compare the results obtained by artillery in this war with the comparative impotence of the Russian artillery in 1877-8, already pointed out. To quote once more from General de Negrier:—"As the war went on, it became quite clear that artillery was the dominant factor by day."[5] The French report, quoted by General de Negrier, says: "The artillery dominated the field."[6] Sir Ian Hamilton thus describes the effect of Japanese long-range artillery fire at Manjuyama:—"Imagine a swarm of ants entering eagerly by an open door, until the housewife seizes her broom and sweeps them out in tortured, struggling clusters."

---

[1] General de Negrier: "Lessons of the Russo-Japanese War."

[2] *Ibid.*

[3] "A Staff Officer's Scrap-book," Vol. I., p. 106.

[4] *Ibid,* p. 109.

[5] General de Negrier: "Lessons of the Russo-Japanese War." [6] *Ibid.*

In commenting on the brilliant results that the artillery were able to produce, General de Negrier remarks:—"After the battle of Vafangu, on 14th June, the artillery on both sides employed nothing but indirect fire," and that "the battle of Liao-yang lasted from 29th August to 2nd September without the artillery on either side having made use of any but indirect fire." He calls attention to the annihilation which must overtake a battery if located, and which is unable to locate an adversary firing on it indirectly. "So long as batteries were allowed to be located, so long their emplacements became practically so many targets, and in a few moments they were reduced to such a condition as rendered it impossible to retire them from the field. Epaulements, whenever visible, were insufficient to prevent the batteries from being at once silenced."[1]

Sir Ian Hamilton considers the importance and power of indirect fire to be equally noteworthy. In speaking of the artillery results at Port Arthur, he remarks:—"It was very evident from 203 Metre Hill to-day that a harbour or dockyard becomes a mere death trap, provided:—

"1. That the enemy's guns can get within range for indirect firing;

"2. That the enemy can seize any one point from which a single man may observe and correct the fire.

"Against an extended line of guns, hidden away behind some mountain six or seven miles distant, the armament of a fortress is absolutely useless. The concentrated guns of the fort have not a hundred-to-one chance of disabling the concealed and dispersed guns of the attack; whereas, given an observation post, the guns of the attack can hit a ship or house every time they fire. . . ." A little further on he remarks:—"As well might a chess player handicap himself by refusing to jump his knight over the other pieces, as an artillery commander decide that instead of throwing his shell over a hill from safe concealment behind it, he would take his howitzers into full view of all the enemy's artillery."[2] The same process is equally applicable in the field to any clear defined objective as to a "house" or "ship."

But it was not only the soldiers who were struck by the enormously increased importance and power of indirect fire which was manifested in this war.

"This (cramped position), however, did not warrant the amazing lack of knowledge displayed in the placing of the fortress artillery, which was too often full upon the skyline. The result was, that the guns became marks for the Japanese artillery, and suffered in consequence. The position taken up by the investing army was also well suited for the placing of artillery; and the Japanese placed their guns so well that they suffered very little indeed from Russian practice.

---

[1] General de Negrier: "Lessons of the Russo-Japanese War."

[2] "A Staff Officer's Scrap-book."

Though all three of the great assaults made upon the Russian position ended disastrously, nothing could have been more wonderful than the artillery support which accompanied them. Perhaps the greatest lesson of the siege was the great success which attended the extensive use of artillery for concentrated fire previous to and during infantry attacks. In the placing of artillery the Japanese have few equals and no superiors."[1] "The Japanese succeeded in establishing an observation post on the crest of the west peak, from which they were able to observe what was going on upon the reverse slopes, and direct the artillery fire by telephone. . . . The independent artillery brigade, comprising six batteries of six guns each, was placed upon a low ridge to the west and a little to the south of the hill, so that an indirect fire could be brought to bear upon troops advancing towards the reverse slopes from the south. Ranges had been carefully ascertained, and telephonic communication established with the observation post upon the crest of the west peak, so that information as to the exact location of reinforcements could be had without delay. . . . During the attack the Russians three times endeavoured to bring reinforcements up the south slopes of the hill. . . . After the position had been taken, the long lines of bodies which littered the approaches and the number of dead upon the reverse slopes, showed the enormously important part the artillery brigade had played in the capture of the position. The practice of the batteries was marvellous, considering the fact that one-half the total number of guns were using indirect fire against the approaches, under directions by telephone from the observation post as to the exact location of the bodies of reinforcements."[2]

The mass of evidence is indeed very great as to the overwhelmingly important part played in the last war by concealed artillery using indirect fire in the support of attacking infantry. There is significance also in the action taken by the leading military Power in Europe, based upon the results of the Russo-Japanese war. The latest German Artillery Regulations[3] embody the most advanced German views on this point, and from them the following extracts are taken:—

"Telephones and flag-signalling are indispensable on active service." This sentence is placed in the introduction, so as to specially emphasise it. "Instead of forming up artillery in a long, unbroken line, it is better to break it up into groups. This renders it more difficult for the enemy to locate the batteries, and to range upon them, and so reduces the effect of his fire. The group system facilitates bringing an enveloping fire to bear, and renders observation and fire control easier, especially when the batteries are in 'covered positions' (*i.e.*, using indirect fire)."[1]

---

[1] "The Siege and Fall of Port Arthur," p. 8. By Richmond Smith, correspondent of the Associated Press.

[2] *Ibid*, sec. 362.

[3] "Drill Regulations for the Field Artillery of the German Army, 1907."

"Covered positions render it more difficult for the adversary to locate his target, and are useful in deceiving him as to the strength and intentions of the force opposed to him. They facilitate ammunition supply and change of position, and enable the artillery to reserve their fighting power for the decisive stages of the combat. Under certain circumstances they favour the action of artillery by surprise."[2]

For their artillery, equally with the other arms, the Germans push to its most extreme limits the theory that dash, contempt of danger, and readiness for the costliest sacrifice of life, are of more importance, and more likely to tend to ultimate victory than taking precautions to minimise losses in action. It is from our knowledge of the persistent inculcation of this spirit throughout their forces that we deduce the significance of the admissions contained in the above extracts.

Like the Germans, we must be prepared to pay the cost of victory, be it what it may; and to that end be prepared to incur the heavier losses when the situation demands it, which will be found inseparable from pushing in to close quarters to support an attacking infantry. We have, however, no reason to suppose that either we ourselves or the Germans are more ready to incur tremendous losses to attain an object, than the Japanese proved themselves in the late war. Reckless of life as they often were, nevertheless, they showed themselves quite alive to the necessity of saving their artillery unnecessary losses by never exposing it when they could compass their object without risk; combining a far-seeing prudence with a fanatical headlong courage never seen in any army of modern times—except, perhaps, the Mahdists at Omdurman.

In the light of the only two great wars which have occurred since the new conditions have prevailed, it appears that our own artillery, both in equipment and tactics, require attention on certain points. The tactics employed are dependent upon the equipment at disposal to make those tactics possible.

A very urgent requirement of our artillery is the provision of a proper telephonic outfit for each battery, and proper organisation for communication.

To "spoil a ship for a ha'porth of tar" is poor economy. The whole of the artillery in India might be fitted out with adequate telephonic equipment for a sum very much less than the cost of the upkeep of a single battery for one year. This sounds a startling statement; I propose to demonstrate it a little later, when dealing in detail with the equipment recommended. To go into action without a proper equipment of the kind, means to expose our artillery to the most tremendous and unnecessary losses under certain conditions, if opposed by an artillery well provided with such adjuncts, and expert in their use; and terrain, even the most cursory study of the Russo-Japanese war must convince us, must very frequently occur in a long campaign where direct fire is placed at a hopeless disadvantage compared with indirect fire from concealed positions, and where visual signalling might be unsuitable or impossible. Useful as visual signalling is, and highly as it has been developed in India, it is not by any means equal to telephonic communication under circumstances of very common occurrence; and it requires no demonstration from me to prove the gravity of the situation in any action where our artillery was outclassed and unable to afford adequate support to its own infantry. The vital importance of the artillery cooperation is written on almost every page of the Russo-Japanese war. It cannot be too clearly emphasised that it is not worth our while, from motives of economy, not to have telephones. I understand, however, that the supply of these articles is now under consideration. I propose to proceed with the consideration of the tactics that we require to adopt, assuming that our equipment for war is complete.

---

[1] "Drill Regulations for the Field Artillery of the German Army, 1907."

[2] *Ibid,* sec. 367 (compare with the views of Gabriel Rouquerol, quoted later).

In the first place, the time-honoured maxims regarding the necessity of massing batteries require very considerable modification. Concentration of fire is as essential as ever; perhaps even more so. But concentration of fire no longer need mean concentration in one spot of the batteries which deliver that fire; exactly the same control can now be exercised over batteries widely dispersed, and an even greater effect produced by the converging fire of dispersed batteries from several points than could be produced by the same volume of fire from the same firing point. Two factors are mainly responsible for this: the vastly increased range of modern artillery and the absolutely instantaneous nature of telephonic communication.

The normal average ranges at which artillery fought during the Russo-Japanese war were about two miles. (*Vide* De Negrier's "Lessons of the Russo-Japanese war," quoting from French official report.) This does not, of course, by any means represent the full range of field artillery; it is clear that artillery, even if two miles from a hostile alignment, is under no necessity of firing only to its immediate front; it has a very considerable latitude, extending to a couple of miles to either flank, the range required being the side of the triangle subtended by a right angle as compared with its fire direct to the front. The instantaneous nature of electricity also allows of orders being communicated to widely-dispersed groups of artillery in less time than they could reach the furthest limits of a long line of batteries in action controlled by the word of command of a directing officer; and, given the most modern light instruments and adequate familiarity with their use, telephonic communication can be opened by the operator accompanying any battery with the artillery commander before the battery is ready to open fire, no matter what may be the pace at which the battery may have to move or the ground it has to traverse.

The second requirement is that each battery should have its own supply of telephonic gear for connecting the director of fire with his battery when using indirect fire.

All such light telephones should have their cable gear independent of any wheeled transport, for the following reasons: In many of the most probable theatres of future wars of the British Army, roads suitable for wheeled transport are scarce and bad; in some they may be said to be practically non-existent. The observer and director of fire will frequently be required to observe from a point inaccessible to wheeled artillery in such countries.

It will be remembered that in 1878-9, Sir Frederick Roberts, when marching to Kabul *viâ* the Peiwar Kotal and Shutargardan Passes, had to put his light horse artillery guns on elephants to get them along. A picture of this operation may be seen on the reverse side of the medal issued for the campaign, with the gun on the elephant's back. If such be the condition of many of the main roads in such countries, it is obvious that the observation posts for batteries working along such rough roads must be usually still less accessible to anything on wheels. Roads are not made to eminences and other points which in war would be suitable for observation. Anyone who has any knowledge of the topography of the Indian frontier, Afghanistan, Persia, Abyssinia, etc., must be aware of this. On the continent of Europe, where a gate opens into every field, and excellent roads lead in every direction, this necessity is less generally felt, though even there, there are certain mountain areas where wheeled transport would have little scope. Even where wheeled transport can move freely, however, there is no particular object gained in using a horse and cart for work for which a horse alone is sufficient.

An apparatus, the invention of an officer of the Indian Army, has for some time been under trial for this purpose, and it is understood to have given very satisfactory results. With this a couple of drums of cable are carried on the limber of one of the guns. When telephonic communication is required between an observation post and the guns, these drums are slipped into a light metal frame in front of a horse ridden by the telephone operator, who rides to the point required for observation, the cable being paid out automatically as he rides forward; he regulates his pace according to the situation, the cable being laid out at a gallop if it is necessary to open fire at once.

With quick-firers in use by almost all civilised nations, the rapid opening of fire may at any time be all important; the use of this apparatus would seem to be the best solution of what, in rough countries, might be an impossible process with carts and a very slow one for men on foot. The apparatus is so constructed that the drum of cable can at any moment be slipped off the horse and transferred to work on the back or hip of the operator, which would be useful were the horse shot or injured or be found too conspicuous, or meet ground too steep for a horse to negotiate. By reversing the action of the instrument, the cable can be recovered on to the drums, if desired, as the horse is ridden back to the starting point, multiplying wheels being used to make the process very rapid. In time of war, telephone cables would be used up as freely as ammunition when necessary, and might be left lying, as was often done by the Japanese; but the process for recovering cable would be very useful as a rule.

Telephonic communication between the infantry and supporting artillery is also essential; if an artillery officer can be spared to accompany the infantry advance, the result of his observation of fire effect will be invaluable to the supporting artillery, if communicated to them by telephone.

It is not sufficient, in the infantry attack, that the artillery support should be continued up to the last minute; it must be kept up to the last second.

With infantry closing on their opponents at a distance of two miles or more from their supporting artillery, there is only one agency by which this can be ensured to the full—that of electricity. As already pointed out, the guns cannot always be rushed up to give "close support" to the infantry, as in days gone by; it would mean under some circumstances very heavy loss, and quite probably defeat its object by the failure of artillery support, due to the wrecking of the batteries, just at the moment when it was most sorely needed by the infantry. Time at a critical moment would be lost over a change of position. "For guns to change position when troops are actually engaged is extremely difficult. The desideratum, of course, is that infantry attacks should be accompanied by simultaneous fire from batteries close at hand. This, however, can only be realised in exceptional circumstances."[1] Except in the case of the enemy being in position on abruptly rising ground, fire over the heads of our own infantry could be continued much later from the longer ranges, and with telephonic direction from the infantry firing line or in its vicinity, the firing would be probably quite as accurate. In any case, in the event of it being advisable to push the artillery in closer in support, it may often be well for some portion of it to continue firing from the original position. There is, of course, the inevitable danger to the infantry from premature bursts due to defective fuses; that, however, cannot be helped, for "war," as the Baboo truly remarked, "is a dangerous department."

---

[1] De Negrier: "Lessons of the Russo-Japanese War."

One of the commonest errors to which gunners are subject is well illustrated by the following passage taken from an account of the fighting on the Taitsuho. I noticed precisely the same incident occur at a practice camp in the rolling country near Chandigarh. It can best be corrected at once by the use of telephones in the hands of an observer near the target: "There were hundreds of Russian shrapnel bursting in rafales of eight over and above these guns. The enemy's batteries had ranged on another ridge about 400 yards beyond their real objective. Some trees grew upon the further ridge, and no doubt helped the common optical delusion, whereby from a distance two features merged into one, and the intervening valley escapes notice. All gunners are aware of their liability to go wrong from this cause, but the Russian practice of ranging in the air with time shrapnel, instead of on the ground by percussion shrapnel, undoubtedly gives greater scope for such mistakes. Anyway, the Russian rafales, so savage in their seeming, were no more dangerous to the artillery against which they were directed than a Crystal Palace firework display."[1] If this error were seen from the firing line, then, failing a telephone, only two methods suggest themselves: to explain the error by visual signalling—supposing it to be possible that a signaller could stand up and signal by flag or helio. from the firing line—or to send a messenger to the guns. Either process would be comparatively slow. "No one who has had any experience in war will treat lightly the delay which occurs when pressing messages have to be sent to some other, perhaps distant, point."[2] When no adequate arrangements have been made for instantaneous communication between the guns and infantry, disastrous results have followed. An instance, too long to quote, will be found in Bennet Burleigh's account of the destruction by its own artillery of the 34th Japanese Regiment at Soushan-pu.[3] The Japanese artillery in this case caused terrible havoc amongst their own infantry as the latter rushed the position, through not knowing when to stop. On at least one occasion—on Pieter's Hill, our own artillery were unable to avoid the same errors; on another occasion, through lack of adequate means of communication, I noticed that the artillery fire was turned off sooner than necessary, and, indeed, ceased just when it was of greatest value.

The use of the "covered position," where equally good support can be given by it as can be done by exposing a battery, should be thoroughly inculcated into our artillery, just as much as the use of cover is insisted on for the infantry.

Every artifice should be encouraged to induce the enemy to direct his fire to the wrong place. Next to being bullet-proof oneself, there is no more satisfactory position than that of knowing that the enemy's fire is being directed elsewhere. I remember an exceedingly simple ruse explained to me by a surrendered Boer in South Africa, which had proved very efficacious. A couple of Boers sat close in under the shelter of a slightly overhanging stone on the crest of a hill with a couple of "reims" tied together and fastened on to a bush a little way off. A Boer gun was firing a little to their flank. Every time it fired they gave the "reim" a smart jerk backwards and forwards, throwing up a thin film of dust. Their own gun was being fired over a tarpaulin to keep down the dust, with a blanket behind a thorn bush to fire through and so hide the flash. The faint puff of dust, which came every time the gun fired, quite convinced us all that it was caused by the wind of the discharge; it went on until the "rimpi" was cut by a shrapnel bullet. I remember seeing in Victor Bulla's photographs from the seat of war in Manchuria (many of which were published in the *Sphere* newspaper), some drain pipes mounted on carts which proved very efficacious as "shell traps." A drain pipe, hollow metal telegraph post, or even a wooden trough, with some loose powder to give a flash and blow up a little dust carefully placed for it to fire into might easily prove of equal value—if fired from just behind a crest of a hill, so as to coincide exactly with the firing of a real gun at a safe distance to the right or left of it; if fired by electricity by the use of a couple of hundred yards of telephone cable the firer would be in no danger whatever. Far better that the enemy should be satisfied that the fire came from there, and direct his attention to the spot he fancied it came from, than that he should commence to "search" what might quite possibly be only a very limited expanse of cover with his shrapnel, with the strong probability of doing some damage, as he very probably would do if he were sure that the fire came, for example, from behind a line of low hills a few hundred yards in length.

---

[1] "A Staff Officer's Scrap-book," Vol. II., p. 94.

[2] Clausewitz: "On War," Book V., chap. V.

[3] "Empire of the East; or, Japan and Russia at War, 1904-5."

The next point to which I would invite attention is the taking up of preparatory positions, with a view to be able to immediately inflict the maximum damage in the shortest time, should the enemy take a certain course which appears probable. It consists, briefly, in gauging the enemy's intentions and lying in wait to crush him by an unexpected torrent of fire as he attempts to put them into effect. "Combined Training" says that "artillery will not come into action until a target is presented to them." Some years ago, before we had the experience of the Russo-Japanese war to guide us, a talented French officer of artillery, Gabriel Rouquerol, anticipated one of the lessons of that campaign by his advocacy of the *position d'attente* — a view now accepted by the Germans and embodied by them in their latest Drill Regulations for Field artillery, under the name of "lauerstellung," or "lie-in-wait" position. The view put forward amounted to this: that on the one hand we waste ammunition by a premature bombardment before knowing with any exactitude the dispositions and locality of the hostile forces; on the other hand, by not bringing our artillery into position until the enemy had disclosed something of his dispositions and the positions of his guns on the approach of an infantry attack, we waste what might prove to be a golden opportunity, unless we are ready to profit by it to the utmost the instant it presents itself. The enemy is found holding a certain position. A certain proportion of the artillery is told off to watch for his artillery coming into action, and to immediately engage them; the rest of the artillery, pending developments, is told off to a *position d'attente* under cover. The infantry attack now begins. The commander has already made up his mind that the enemy will choose a certain line of counter-attack, and that his supports will be advanced by certain approaches. Against this foreseen movement the whole of the artillery in *position d'attente* is ready; ranges have been taken, position occupied, guns laid, observation posts selected, and all orders already issued; the gunners stand with their lanyards in hand ready to sweep the doomed area with a hurricane of rapid fire upon the enemy attacking across it. Should the enemy's intentions have been incorrectly forecasted, it is contended that the artillery are no worse off than before; they have not disclosed their position, intentions, nor strength, and are just where they would have been had no *position d'attente* been taken up. It is now known that something similar was done by the Boers at Colenso and Pieter's Hill; certain patches, over which it was looked upon as probable that our troops would advance having been marked by burning them, the Boer gunners being in *position d'attente* for their occupation by the British. Tactics very similar in principle marked the action of the Federal artillery at the battle of Gettysburg, when they silently lay in wait for the charge of Pickett's Virginian infantry—a charge which, if successful, might have changed the result of the greatest battle of the campaign, and with it the history of North America. Instead, the charge was beaten back with the loss of six-sevenths of those taking part in it. (Henderson, "The Science of War," Chap. X., p. 305.)

A more elaborate measure of forethought, somewhat similar in principle, which it might also be well worth our while to practise in time of peace, though only applicable where time has been available, is that of which the following description is given by Sir Ian Hamilton in his account of the battle of the Yalu: "It now only remained to perfect the arrangements for offensive action. With this object, two observation stations (marked on the map) were established on the high ground some 3,000 or 4,000 yards in rear of the batteries, from whence a good view could be obtained of the Russian camp behind Chiuliencheng, and of the lateral communications, such as they were, which ran in rear of the Russian entrenchments. These observation stations were connected with the howitzer batteries by telephone, and both batteries and observation stations having duplicate maps of the enemy's position marked out in small squares, the observers on the southern heights were able, by merely telephoning down the number of a square, to switch the whole fire effect of the masked batteries on to any spot where they from their elevation could see a suitable mark present itself. Platforms were also erected in trees on the flanks of batteries from whence officers would be able to make local observations of the effect of their fire. All this was accomplished in one night. . . . ."[1] If these uses of the *position d'attente* be compared with the very similar use made of the same principle at Port Arthur, a description of which, by Mr. Richmond Smith, has been already given, it may reasonably be assumed that occasions will occur constantly in war where the support of the infantry can best be ensured by the full elaboration of a scheme based upon a shrewd forecast of the enemy's intentions.

"The artillery not infrequently produced a startling effect upon troops which, believing themselves sheltered, had committed the blunder of remaining in close order instead of deploying into open formation. On July the 9th, the Japanese had massed their infantry together in a valley near Gaitchu. A Russian battery of 30 guns, placed behind a low hill, concentrated an indirect fire upon them, and in a few moments wrought considerable havoc."[2] Little imagination is required to realise the importance of the results of a scheme of the kind, if fully successful.

So appalling is the rapidity of fire of the latest type of quick-firer, so terrific the effect, that it might easily happen that a blow of crushing weight had already been delivered before the enemy had realised the situation sufficiently to take measures to meet it. Appropriate changes of orders have to be thought out, communicated, and carried into execution; above all, the concealed artillery which is doing the damage has to be located, ranged on, and silenced; and meanwhile the infantry attack—its task immeasurably lightened by the fact that those immediately opposed to it are reeling under the weight of a sudden and unexpected tornado of shell — has become so threatening a factor that no guns can be spared for dealing with any other arm. It can hardly be gainsaid, I think, that to deny ourselves the possibility of the action indicated above, which might at any time be demanded by the situation, would be to place us at a most serious disadvantage as compared with an adversary whose freedom of action was unrestricted. It has been shown that we cannot ensure adequate support to our infantry without ensuring the most rapid communication, not only between the infantry and artillery, but between the dispersed fractions of the artillery; the advantages of the infantry commander being in touch with his infantry during all phases of an action are equally obvious. I have not insisted on this latter point hitherto, as the same reasons apply as in the cases given, and are equally cogent. Examples of the disastrous results due to failure of communication between an infantry commander and his troops are so numerous in every campaign of which we have record, that I will content myself with naming a few engagements at random, in which disaster resulted from it:—Adowa, Gettysburg, Spion Kop, the Motienling, and the Russian attacks at Plevna. "We have no right to run the risk of again exposing our soldiers upon the field of battle with out-of-date equipment and obsolete tactical methods."

---

[1] "A Staff Officer's Scrap-book."

[2] De Negrier: "Lessons of the Russo-Japanese War."

I make no apology for repeating this quotation from General de Negrier. It applies to us just as aptly as to the French. Obsolete tactical methods are, to a great extent, the corollary of out-of-date equipment, for we cannot possibly make full use of the most modern methods or armament if we are deficient in the mechanical machinery required for using them. Two points stand out as a result of our investigations above:—

1. Co-operation between infantry and supporting artillery cannot well be ensured without some means of rapid communication between them; the more instantaneous and inconspicuous the better.
2. Neither arm can utilise to the utmost the increased powers conferred upon it by recent extension of the range of firearms, unless provided with the means of similar inter-communication within its own component parts.

(*To be continued.*)

TRAINING FOR TERRITORIALS.

By Major J. H. HASTINGS, 6th Battalion West Yorkshire Regiment.

> "Had some new question been under discussion, O men of Athens, I would have bridled myself until those who usually give their opinion had spoken, and if aught they said pleased me, I would have held my peace."—*Demosthenes, I. Philippic.*

IT is very surprising, I think, that no old Volunteer has replied to General Baden-Powell's lecture of the 21st October, 1908, on "Training for Territorials," a lecture which not only contains much food for thought, but also affords much ground for discussion.

Mr. Haldane, differing from his predecessors, came into office with no cut and dried scheme of a civilian for the reform of the Army, but with an open, judicial mind. He took evidence from experts, summed up and pronounced sentence. Whatever may be said of his changes in the Regular Army, it is certain that for the Home Defence Army he has provided a scientific organisation—an organisation which, moreover, will remain, whether its cadres be filled by voluntary Territorials or compulsory service men. As to this there can be no question.

That we must have a Home Defence Army both great political parties and all thinking Englishmen are agreed. Indeed, those who fully and frankly speak their minds go further and point to the necessity of the Territorial Army not only as a force for home defence but also a means of training officers and men for wider Imperial purposes, when again a great oversea war makes a call upon the nation, as assuredly will one day be the case.

The question which General Baden-Powell set himself to answer was, however, not whether a Territorial Army on present lines was the best thing for this country, or whether such a force could in the time available be made fit to withstand Continental troops, but whether "the method used by the army for training the Regulars is in every way the best adapted for training the Territorials."

Unfortunately, discussion wandered far from this question; indeed, only here and there did it touch it. As a member of the Institution, who was not present, although somewhat late in the day, I may, perhaps, be allowed, with all respect for the gallant General's opinions, and with due deference, to offer a few criticisms—not all, I hope, destructive.

I propose to deal with General Baden-Powell's paper under three heads:—1. His observations on the Volunteers of the past; 2. His proposal for the training of the Volunteers or Territorials of to-day; and 3. General.

I.—OBSERVATIONS ON THE VOLUNTEERS OF THE PAST.

One cannot help feeling in reading General Baden-Powell's lecture, that his knowledge of Volunteer Forces has been gained in the Colonies rather than at home; or that his knowledge of home Volunteers has been gleaned from their work in the sixties. I have had an intimate connection with the Force for nearly a score years, and am astounded to hear of Volunteers to whom "it put a different complexion on their joining the Force, and upon their work, when it was mooted among them that they had to learn fighting."

Then as to the "goose step." I remember when I went through my recruit's course, being asked by a man in one of the London Corps if I had got through the "goose step" yet; but to the best of my knowledge this (the "balance-step") has never, for 30 years at all events, been part of the curriculum of the Corps to which I belong, and for many years it has been, I believe, no *usual* part of the Volunteers' training.

The Corps that I know—and I have seen, trained with, or mixed with a good many—have all put fighting efficiency first, and would resent strongly the charge that they were, in the words of the lecture, "a parade force with a certain amount of drill in them."

What have we been doing for the past quarter of a century? Tactical Societies for the study of military science and the education of the officers of the Volunteers have sprung up, wherever there were a few Corps. The Manchester Tactical Society dates from 1881, the West of Scotland Tactical Society from 1885, and in London there are many with a similarly long history. In the North-Eastern District, with which I am best acquainted, local societies, like those of Leeds and Bradford for example, were amalgamated in 1894, after many years of useful work, to form the North-Eastern District Tactical Society, with headquarters at York, divided into the Tyne and Tees, North and East Ridings, West Riding, and North Midland Sub-districts, and these are divided into "centres." This amalgamation of societies owed its origin to a Volunteer, the late Colonel H. D. Sichel (3rd V.B. West Riding Regiment). Colonel the Hon. J. G. Napier, "Garrison Instructor" at York, was the Hon. Secretary, and General Sir Reginald Thynne as President was a most invaluable "chief" and help to the work. The local centres had lectures followed by staff rides, or what we then called "outdoor tactical exercises," for both officers and non-commissioned officers—alone or in connection with neighbouring "centres." Twice or three times a year the whole society had a combined exercise, by turns in the various sub-districts and under the direction of the general and his staff.

Whether these were serious work or not may be judged when I say that as critics we had at one time or another, in addition to the general and his staff, many distinguished officers, General Wauchope of the Black Watch, Colonel G. F. R. Henderson, of "Stonewall Jackson," and Colonel W. W. M. Smith among others.

This theoretical and skeleton work was afterwards put into practice. Company manœuvres followed by small operations of two or three companies, led up to half-battalion and battalion work preparatory to the annual camp training. Night outposts and attacks were carried out with Regular officers of experience as critics.

War games were played, as they have been for twenty-five and thirty years, and as they are still.

In all districts similar work was done.

General Baden-Powell observes that "the objects of the new Force are very different from the old"; but this is surely not so. In either the object is home defence. He finds "the present officers we are getting far more capable and far more keen than he had expected on taking over his division"—"they are quite anxious to take up their work." No doubt the magnetism of their general's presence, example and words, has kindled, as it would anywhere, an enthusiasm warmer than existed before; but no doubt also many of the officers in question were keen before—had taken examinations in "C," "D," and "G," had been through a course at Hythe, or in signalling, or in other ways shown their willingness to make themselves something more than paper efficients and, above all, had trained their commands well.

There is at present a feeling that the Territorial Force is a vastly better trained Force than the Volunteers. It will be in time, but that time is not yet. The fact that we had a fortnight under canvas last year, instead of a week, did something for us; but (I am speaking of training not organisation) it is doubtful whether the Territorial to-day is any better trained than the Volunteer of 1900 after his fortnight at Aldershot or Salisbury Plain, or elsewhere.

General Baden-Powell found that they need not waste time in trying to teach their officers their business as they had only to expect them to know it, and they would learn it for themselves. Has the passing of the Territorial Force Act wrought this miracle? Presumably 80 or 90 per cent. of his officers are old Volunteers, who were formerly animated by a like spirit.

In his lecture the General tells how he "trained Colonial Forces of Volunteers for Active Service in the shortest possible time—men who had within a few weeks to take their place on the actual field of battle." He says it was on those occasions impossible to get "any efficiency by going through the old methods of the 'goose-step' and so on. 'Sword exercise' had to be abolished." These remarks are by way of contrast to the system under which it is more than hinted the home Volunteers were trained.

Of the home Volunteer Force 18,000 officers and men went to the South African War in formed detachments, and some thousands more went in one force or another.[1] How did they—trained, as is suggested, in the "goose-step" and "sword exercise"—acquit themselves? Colonel Henderson wrote of them[2]:—"In a very short time the Volunteers were not to be distinguished, except perhaps that they depended upon themselves rather than upon their officers, from the Regulars."

They do not appear to have sent deputations, like the Colonials of the lecturer, to say that their "officers knew no more about war than themselves, and that they did not like to trust their lives to them," or to have asked "whether they could have Regular officers?"

It may be said that these home Volunteers were picked men and above the average. They were the best of the men who came forward voluntarily, offered themselves without compulsion. The *only actual selection* was in the matter of musketry and the medical examination. It is certain that in 1900 the Volunteer Force could have turned out many thousands more in every way as good as those who went to South Africa.

Ten drills and camp may have been enough to satisfy regulations, but in any reasonable corps the average was more like twenty drills and camp.

I know too well the deficiencies of the Volunteers and the inequality of the training and efficiency of the units forming it; but General Baden-Powell's sweeping condemnations I venture to consider undeserved.

II.—PROPOSALS FOR THE TRAINING OF THE VOLUNTEERS OR TERRITORIALS OF TO-DAY.

No one can criticise the excellence of General Baden-Powell's "Main Steps to Efficiency," namely:—

1. Officers made responsible for their units.
2. Sub-division of units into small groups.

In the West Riding of Yorkshire these principles have been followed for many years. I mention this as being within my own knowledge, but I have no hesitation in saying that it has been very generally so in the Volunteers at home, and not merely in the Colonies.

What is wanted is that every officer of the Territorial Army should take a serious interest in his military work; be assiduous at drill and musketry, but also a student of military science and history—at home, in camp or bivouac—able to light a camp fire and make a rough meal; able to extemporise a shelter at night, against either weather or bullets; and able to work across unknown country by map and compass. Book learning is not enough. "No books will ever make a man a soldier," says

---

[1] *Times* "History of the War," Vol. III., p. 21.

[2] "Science of War," p. 425.

General Maurice.[1] "No books will do him any service which tend to distract his thoughts from the study of men, from the care and command of men, from sympathy with men, from learning to deal with men, from active life, from practical energy."

There is nothing new in this. Forty years ago Lord de Ros wrote[2]:—"Of all the studies to which a young officer should direct his mind, none will be found more important than that discrimination of character, and observation of the habits of the soldier, upon which so much of the officer's influence and fitness for command must depend. Let him endeavour to imitate the manner in which the best officers of the different ranks of his regiment exercise and maintain their authority. With this attention anyone possessed of ordinary good sense will soon acquire the true and only mode of governing soldiers and gaining their respect and attachment. Popularity of manner alone will not avail; the first step towards this important end is a thorough knowledge of his own duty."

Supposing, then, that our officers are all aiming at some such ideal, let us consider how they should train their commands.

I venture to say that close order drill comes first of all, as the foundation of discipline and ready obedience, and, indeed, as a *necessity* where large forces such as the divisions of the Territorial Army have to be assembled and moved.

To quote the Boers, as General Baden-Powell does, as an example of how undrilled men may fight, is, I think, a dangerous and misleading argument in any case, but particularly when the argument is used as a basis upon which to build a system of training for the British Territorial Army.

Colonel Pollock has indeed pointed out[3] the importance of "training the *man* by attempting to revive in him the inborn qualities and instincts of his forefathers—the hunting and fighting instincts of primitive man"; but he holds that it is only *when small bodies are opposed to small bodies,* "and success depends upon individual initiative," that "Boers, backwoodsmen or native hordes possess advantages against which ordinary training will be found to be of little use."

The purpose of the Territorial Army is not to deal with such small bodies, but to oppose a Continental Army of highly trained troops.

It must be remembered, too (and particularly by those who hold that Rifle Clubs are all that we need), that the Boers were something more than simple farmers who could shoot. Their shooting was certainly one great feature of their strength, but not the whole secret of the wonderful stand they made. Their horsemanship, their mobility, and (bred of life on the veldt) their independence of elaborate supplies and transport—further, their *existing organisation* under field cornets and commandants—

---

[1] "War," p. 119.

[2] "Young Officer's Companion," p. 2.

[3] *XIXth Century,* May, 1905.

were all factors which made for success; as also their knowledge of the country, and the fact that their horses needed no acclimatising.

They had been preparing for the war for years, whether before the Jameson Raid or not is immaterial; at all events, they erected forts at Pretoria and Johannesburg, and imported large quantities of arms, equipment and ammunition nearly two years before the Raid[1] (that is, six years before the war). Many of their leaders had experience of war against natives, and a great many of the older Burghers in the ranks had also.

The Transvaal artillery was commanded and trained—that is drilled—by Wolmarans and Erasmus, who had been sent to Europe by Joubert to study the work. The Free State artillery was trained and commanded by a German, Major Albrecht.[2]

If the Boers did so much to train their artillery, is it to be supposed that the rest of their force was untrained? Would they *everywhere*, for example, have made the same type of trenches, *a type new to war,* if there had been no thought-out scheme of training before the campaign?

This training was not drill it is true, but highly special training for a peculiar campaign of a very different order from any that the Territorial Force is designed to engage in.

For fighting in enclosed country, where control is well nigh impossible, "individuality is more than ever valuable . . . . each sub-commander has to think for himself,"[3] but for such work very high training is needed. "In the Orleans campaign the French General Chanzy hoped to delay the enemy by holding the banks and enclosures; but here the higher training of the Germans came in. They penetrated the opposing lines and cut off large parties of the French."

Surely such higher training includes *drill,* otherwise control would be quite impossible; and it is to be feared that the Germans would overmatch us as they did General Chanzy.

General Baden-Powell would train our men as the roughest Irregulars; "they can," he says, "pick up drill and such items afterwards."

What comes of Mr. Haldane's organisation in such case? What sort of a hopeless mob would the Territorial divisions, *undrilled and hastily mobilised to repel a hostile raid,* be? No amount of individual intelligence and individual *minus-drill* training will make up for drill *when large forces are to be assembled.*

Every officer of the Volunteers must have noticed, when the pendulum had swung too far in the direction of open order, wide open order, and nothing but open order at the time of the South African War and just after it, how any of his men, who had a tendency to get lax, soon got out of hand.

---

[1] "Great Boer War," by Conan Doyle, p. 67.

[2] "Boer Fight for Freedom," by M. Davitt, p. 330-331.

[3] Colonel Ovens in the JOURNAL OF R.U.S.I., May, 1905.

My idea of the system of training to be adopted may be gathered from what follows[1]:—

The close order work should be done, for the most part, at the beginning of the "drill" season; but while it is going on a company commander should take his subalterns and non-commissioned officers in hand and endeavour to interest them in small tactical schemes. These do not necessarily mean a fixed evening or afternoon when all should work together. Let a captain fix a subject: the defence of A——— Bridge, when attacked by such and such a force from F and defended by such another force; or the best means of attacking B——— Hill from G, and so on.

He should ask his subalterns and non-commissioned officers to study the question on the ground at their own leisure and report within a week (or a fortnight) in correct form—with sketch—which he would then criticise.

Meanwhile, also, a few picked men would be trained as scouts, and all ranks must be taught distance judging and the field signals.

Officers and non-commissioned officers must know how to write reports and messages, and understand the importance of touch and co-operation.

When the company turned out in the spring for small company "manœuvre" trainings, some of the schemes which had been studied theoretically would be worked out with men, the scouts taking their part. As General Baden-Powell well observes, it is not as a rule very difficult to get ground for small forces to manœuvre on, and as a rule the expense need not be great.

Half-battalion or battalion training would follow.

In these operations, which should be on rough ground, with features lending themselves to tactical incident, special attention should, *in the early stages,* be paid rather to such matters as sighting of rifles, cover, extensions, direction, signals, silence, and the co-operation of units, than to the soundness of the tactics.

Such exercises should always be based upon some simple but definite scheme, and should comprise advanced, rear, and flank guards, outposts, attack and defence of positions, villages, bridges and farms.

Entrenchments, head-cover, loopholes, sangars, etc., should be practised; but where local circumstances render this impossible their vital importance should be fully explained, and the principles of their employment shown *on the manœuvre ground.*

During the whole training, lecturettes and explanations should be given as opportunity offers.

This should include all the subjects alluded to in the above "syllabus"; but such matters as camp life and duties, mobilisation, field cookery and field fortification should be touched on, and men should be encouraged to think about them, as about anything, which, while quickening their interest in their work, might tend to make them better soldiers.

---

[1] My suggestions for training are for infantry, but *mutatis mutandis* apply almost equally to other arms.

Officers must keep their men interested and remember that they will get more out of them by leading than by driving.

Officers, and non-commissioned officers particularly, but scouts and senior privates too, should be taught rapidly to make up their minds under whatever circumstances they may find themselves.

Some sort of physical training is of vital importance.

In the winter months officers should give special attention to the war game and to examination subjects. Lectures should be delivered to officers and non-commissioned officers. Physical drill, bayonet fighting and gymnastics should develop the physique of the rank and file, and indeed of all ranks perhaps.

But all these things are of no use unless men can shoot straight, and the rifle range must have a full share of attention. The allowance of ammunition is unfortunately inadequate, and it is a wrong state of affairs that, as is the case in most corps, it is necessary for private subscriptions to provide enough for a reasonable amount of practice for the keen shooting men.

The question of discipline, and how to teach and instil it in a force which trains at odd times, and never for more than half-a-day at once, except in the continuous fortnight in camp of exercise, is one deserving the closest consideration of all officers.

We have to inculcate a discipline, of *esprit de corps,* and of pride of company. We have to encourage the spirit that makes a man resolve to carry out to the uttermost the oath he took on enlistment, "to be faithful and bear true allegiance to His Majesty and faithfully defend His Majesty, according to the conditions of his service"—the spirit that makes a man resolve that he will always respect the King's uniform and so conduct himself, whether in uniform or not, that, in so far as he has anything to do with the matter, the Territorial soldier shall be a man to be honoured and respected, and the spirit that makes him resolve that he will be efficient and *able* to fight for his country.

I have spoken up for drill, but drill alone will not produce the discipline that we want. It depends upon character—the character of the officers: their knowledge, tact, firmness, justice, and other qualities which make their men respect them. The Duke of Wellington wrote to his brother in 1812:—"In my opinion those take an erroneous view of what an army is, if they suppose that well-drilled recruits are all that are required of it. Subordination and habits of obedience are more necessary than *mechanical* discipline acquired at the drill; and these can be acquired by soldiers to any useful purpose, only in proportion as they have confidence in their officers, and they cannot have confidence in officers who have no knowledge of their profession."

The question of the different discipline existing among Regulars and non-Regulars was much discussed, with the

Colonial contingents as a text, during the South African War, and it is interesting to read in this connection the following words of Colonel Henderson regarding the American Civil War[1]:—"So far as history can tell us, no army, however high the standard of education, has really become efficient until *obedience has become an instinct,* and the presence in the ranks of men who are accustomed to think for themselves and to reason before acting, however weighty the authority which bids them act, renders the acquirement of such instinct a long process. When soldiers once become imbued with the habit of obedience, then doubtless the more intelligent will be the more useful; but enthusiasm and intelligence will not stand the stress of battle and the hardships of campaigning unless their possessors have *learned to subordinate their reason and inclination to their duty;* . . . . . . if the soldier's training is what it ought to be, his education for individual action will go hand in hand with his acquirement of the habit of self-effacement."

We have to train our men, then, in two—at first sight antagonistic—ways, for we have to train them to act intelligently when thrown on their own resources; that is, we have to develop *their individual intelligence,* while we have also to train them to exact drill and implicit immediate obedience, making them as parts of a machine, and to *subordinate their intelligence.*

I admit and realise to the full the difficulty of all this; but an ideal to work to is a good thing.

III.—GENERAL.

It is difficult, when all is said, to see how the Territorial Army is to accomplish a high standard of training where the Volunteers failed. Where is the difference? Fourteen days camp instead of seven, and, a very important point, the fact that under the new *régime* divisions and brigades have permanent commanders, whose sole duty it is in peace to train, and direct the training of, the forces which in war they would command, and who have properly organised staffs, which are likewise definitely attached to these same divisions and brigades. Still, there were many brigadiers and brigade-majors under the old order who were not only able but keen soldiers, resolved to make their brigades fit for war; and unless the Territorial Force has, what it still lacks—as the Volunteers lacked it—the support and interest of the British public, the approval and sympathy of the British public, and the resolve of the British public that its sons shall enlist, not all the admirable organisation, nor all the skill of generals of divisions and of brigades, and their staffs, will be able to make the Force so much better than the Force it has superseded as to bring it to the standard which circumstances and the times demand.

The Territorial Force is—and the public will one day realise it—one of the greatest and most valuable educational mediums in the Kingdom. As a "Continuation School" it ranks high in that most important of all branches of education, the *formation of character,* that is, of will and will-power, tempered by judgment, restraint and subordination. The British public seems to think that to give its children a smattering of about ten different subjects is to educate them, and that provided there are enough subjects, however little the poor infants know of them or understand them, they are fit for the battle of life at 14. But not all the Latin, French, mathematics, and science which a boy learns at school (or perchance does not learn) make a man of him. A very different training and mental discipline are needed to accomplish this; but many schools and school systems appear to ignore this, or else why, after nearly 40 years of compulsory education, are "hooligans" on the increase?

---

[1] "Science of War," p. 300.

Discipline, habits of order, self-respect and respect for others and for lawful authority, self-control and manliness, are all parts of the Territorial system and training; and it is in such a school as this that character is moulded. Yet how many people, even educationists, still consider the Force of no value?

RASPLATA

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from October JOURNAL, p. 1341.

CHAPTER IX.

GUARD DUTY—BAD SIGNS OF DEMORALISATION—THE FIGHTING IN JULY AT LUNWANTUNG AND THE GREEN HILLS—A HEAVY LOSS FOR OUR SHIP—REAL SIEGE BEGINS—A SURPRISE WITH OUR SHELL—THE FLEET FIGHTS ON LAND.

IT was on 9th July that our turn came round for guard-ship. The *Diana* therefore remained outside after the "big operation."

We had the typical hot and rainy weather of the subtropical zone. The sky was overcast. It was not very hot, but close; the air was thick with moist steam. Through this kind of haze our searchlight beams had a milky appearance and did not light up distant objects well, whilst they blinded one's eyes, so that one could not see anything. Our 24-inch projectors hardly reached 12 cables [2,400 yards], and even the big 36-inch lights of the fortress only 2½ miles.

Our time on guard was a busy one. The Japanese were evidently furious at our frequent excursions. They turned the favourable weather to good account, and appeared every night in the roads to drop mines and attack the guard-ship.

On 10th July the Japanese only reconnoitred and did not come inside of 30 cables [6,000 yards] from us. The *Diana, Gilyak,* and the coast batteries concentrated their fire on them and had no difficulty in chasing them away. To make up for this, two destroyers made a plucky attack on us the following night. They were already discovered at a distance of 3 miles, but did not fire their torpedoes until they had got to 15 cables [3,000 yards]. The next morning we fished up two Whitehead torpedoes which had not sunk.[1] They had evidently been intended for us. On the other hand, we had distinctly seen some of our shell make hits. The hostile boats succeeded in making good their escape, but they certainly suffered losses in men and damages to their vessels.

---

[1] The Whitehead torpedo possesses an arrangement which sinks it automatically, when it has missed its object, so as to avoid it falling into the enemy's hands.

During the night of the 12th the attack was renewed. Again it had no results, but apparently we were in luck. We observed one destroyer at about 22 cables [4,400 yards] suddenly stop, and then slowly turn round 16 points, evidently with her engines only. All round her the sea was literally boiling with our shell. Then we saw a mass of thick black smoke, such as is caused by the explosion of a torpedo head loaded with melinite. When this had cleared away, our searchlights could not discover anything of the destroyer. Possibly she had sunk. The others escaped.

I say "possibly," and dare not state it categorically. My experience of war has taught me that in a night action things often look as one would like them to look. Moreover, not one person, but many together see these things. How is this? Is it a case of self-hypnotism or hallucination *en masse*? Let experts decide. Of this fact there can be no doubt. There were examples not only on our side, but also on that of the adversary. In Port Arthur we often got copies of the *Chefoo Press*. Chinese who ran the blockade in their junks brought them. In this paper, during June and July, we read three times: "The *Diana* has been sunk in consequence of a successful torpedo attack." One picture of our foundering was described with much detail. I am sure that the commanders of the Japanese destroyers did not render their superiors any reports which were intentionally false. They certainly did not do so for the simple reason that their superiors were able to verify the reports by their spies, if not the next day, certainly in three days. It is certain that not only the captains, but many men of the crews of these destroyers, firmly believed that they had three times been eye-witnesses of the foundering of the *Diana*.

However, I have digressed from the course of events.

On 12th July the *Pallada* took up our billet in the roads. We went to that of the guard-ship in the entrance.

On 13th July the Japanese tried for the first time to interfere with the work of our mine-sweeping flotilla. Towards 1 p.m., at a distance of 4 miles from the shore, it was fired upon by five hostile destroyers. These helpless steamers had, of course, to cast off their lines and return to the protection of the coast batteries and guard-ships. A few rounds from the *Pallada* and *Bobr* sufficed to cool the ardour of the Japanese destroyers and to drive them to a considerable distance.

During the night of 14th July the Japanese attacked the *Pallada* with destroyers, but without success. This was their last attempt to sink the cruiser on guard. They had satisfied themselves that these attempts were useless, and costly to themselves, and in future only appeared in the roads at night to lay mines.

Of course we also learnt something from our bitter experiences, and adopted Japanese methods. We fitted our destroyers for the purpose, and then sent them out at night to strew mines where the blockading ships were in the habit of cruising about by day. This, of course, did not remain unknown to our energetic and alert opponents. They at once commenced a systematic search of the waters where we had laid our mines outside the range of our coast batteries and guardships.

Such cases as occurred on 13th July, when our mine-sweeping craft were attacked by the enemy with impunity, had to be prevented. In future this flotilla was only sent out under a convoy of two or three gun-boats and a destroyer flotilla. The Japanese did the same. Consequently, during the whole of July, people on shore were daily able to witness a strange, almost ludicrous spectacle. Our mine-sweeping flotilla searched for the mines which had been laid by the Japanese. In their wake, where everything had been cleared, came the gun-boats. To seaward of this procession were our destroyers. Then came an empty space of 15 or 20 cables [3,000 to 4,000 yards], and beyond this the Japanese destroyers, out of range of the batteries and guard-ships. Still further out the Japanese mine-sweeping craft were looking for the mines we had placed, and with them were the gun-boats and small cruisers protecting them. Sometimes the destroyers got bored and approached one another somewhat nearer. Then they commenced firing at one another at long range (for their guns). But it never developed into a regular fight. They soon separated again. Sometimes the Japanese destroyers showed "cheek." Under the belief that either the *Askold, Pallada,* or *Diana* were in the roads, they would carelessly approach the guard-ship up to 55 to 60 cables [11,000 to 12,000 yards]. Suddenly they discovered that it was the *Bayan,* which was sending them a few segment shell from her 8-inch guns. Then all was confusion and hasty retreat. On board the guard-ship people laughed and joked, for this was always a little change.

The order in which the ships went on guard was now suddenly changed. On 15th July the *Pallada* was to have relieved us in the entrance. But she had urgent defects and went into the West Basin. We remained out. On the 18th we again for some reason could not get a relief. On the 22nd we took over the guard duties in the road, where we remained, not three times, but four times twenty-four hours.

During these days (especially between 19th and 25th July) we had almost incessant rain, fog, and thunderstorms. It was only during rare and short intervals that the weather became tolerable.

On 21st July our destroyers, fourteen in number, went out on some night enterprise. Why and whither remained unknown to us.

On 22nd July, at 10.45 p.m., our searchlights discovered a Chinese junk. She was coming from seaward, and making straight for the roads and the entrance with great boldness. We opened fire. The junk obstinately continued her course for some time. Then she turned off and ran on a rocky reef projecting from Golden Hill (Lutin Rock). Towards 2 a.m. several destroyers appeared for a moment. They disappeared as quickly when our batteries opened fire on them.

On 23rd July the admiral commanding the cruisers came on board the *Diana*. He shouted at us, and rated us roundly. He said we had fired on the junk which was bringing us a mail from Chefoo. It was quite clear that if this junk had been expected she should have been furnished with recognition signals. Moreover, our superiors ought to have informed us, the cruiser on guard, that such a craft was expected. Without this we were fully justified in not allowing the junk to approach us within torpedo range, or to enter the harbour. Might this not be a Japanese *ruse de guerre*? Might not the junk have carried some apparatus for launching a torpedo? Possibly she was herself a gigantic mine laden with hundredweights of melinite or shimose. Naturally every officer could listen to our Admiral and say to himself: "Jupiter, thou art angry, therefore thou art in the wrong." There was no need for any one to take his thunder to heart. I might even have omitted this episode, as it does not offer the reader anything of special interest. But there was another point in connection with this. I was aghast at the indifference, not merely calm, but contemptuous, with which this unmerited censure of our superior was met. He was, as it were, talking into space, without reaching anyone.

At breakfast one of the sub-lieutenants referred to the injustice of the treatment we had received, and said that the man who was censuring us had been in the wrong himself. He was at once silenced by a sharp remark of his neighbour. The latter merely said: "Be quiet! it is not worth talking about. What else can we expect?" There was silence all round, and I suddenly realised that the second in command had a far more important and difficult duty to perform here than the mere outward one of maintaining order on board with all means at his disposal. I suddenly remembered a number of incidents to which, absorbed by the multitude of my duties, I had at the time not attached any significance. Once, for instance, being anxious to raise the spirits of the men, I began mentioning the rumours that it was intended taking the squadron to sea to fight a decisive battle. These rumours, which were just then going their rounds in the squadron, had originated with the chief of the staff. It was said that we had only returned on 24th June on account of the *Sebastopol's* leak, that the repairs were going on apace, and that as soon as they were completed we were to offer battle to the enemy. No one had contradicted me. But when I had finished, my neighbour said quite softly, as if it were to himself: "What is the good of talking about it? Do you really believe this yourself?"—Another time I had come into the mess unexpectedly, and overheard a fragment of conversation. Someone was just saying: "Why should we ask him? Of course he will talk us over. His views on the service and on our duty demand this. He himself. . . ." On my appearance the conversation was suddenly broken off. Now I understood everything. It was I who was meant. I remembered many another thing, all trivialities, but symptomatic.

Yes, there was no longer any doubt possible. My messmates avoided discussing the events of the war with me (as they thought that I was not open with them). And that on board the *Diana*, in our mess, hitherto so harmonious and united! The war had made us friends, but this friendship was not proof in the case of a "superior." And I was one of their "superiors."

Should I try and speak quite openly with my messmates? Might I forget my duty to maintain the prestige of leadership by all possible means? I should have done this, had I spoken of all that lay heavy on my heart. If I wanted to maintain my popularity I should have to begin by criticising all orders received. But that would have been useless. I should only have demoralised people still more without effecting any change in the orders. Beside which I should anyhow not have gained my object—their "superior" I remained. Instead, I should have lost their esteem, and this was what I valued most, and which could be of some service to us in action.

I saw before my eyes a picture of utter demoralisation. Of discipline there only remained the outer forms. Its real basis, belief in the superiors, was gone. But it was this belief alone which could guarantee obedience, self-denial, self-sacrifice—in a word, success. The tone amongst the officers was bound to influence to some extent that of the men. What did all this mean for the future?—History has answered.

During the last days of the siege about 9,000 men fit for work were counted in our positions. When the fortress was surrendered the Japanese made 23,000 prisoners, not counting sick and wounded. They were all soldiers, and were in good health.

I was no prophet, and could not predict all this. But now that I was oppressed by all these sad thoughts, I could not help recalling a conversation of the early days of the war.

We were speaking of the surprise attack by the Japanese.

"We have been betrayed," said the gentleman with whom I was talking.

"Indeed? And what is your idea of the matter?" I replied. "Do you believe that the Japanese have bribed some one?"

"It is all one," he urged. "Perhaps the cause is bribery, perhaps personal guilt, malice, our imagination, or simple stupidity."

It may be that I was wrong, but I was under the belief that this line of reasoning—though not so bluntly put—was gaining more and more ground. This reticence, this taciturnity, this reserve of the officers when in the presence of their superiors, was only too eloquent.

On 24th July, at 3 a.m., we in the *Diana*—she was on guard—heard guns to the eastward. It appeared to come from Taché Bay, where the destroyers *Boyevoy, Grosovoy, and Lieutenant Burakoff* were patrolling. On account of the weather—fog and drizzle—we could see nothing. At daylight everything was cleared up. This night action had ended very sadly for us. Japanese destroyers, torpedo-boats, or more probably steam launches armed with torpedoes, had made use of the favourable weather, and had penetrated into Taché Bay at low water. Our land patrol had not noticed anything. The Japanese then attacked our vessels from the shore side, from where they had not expected any attack. The *Grosovoy* was not hurt, but the *Boyevoy* was much damaged. Her foremost stokehold was blown up. But the worst was that the *Burakoff*, our only fast boat, was blown nearly in two and sunk. With her we lost the only half-way reliable means of getting into communication with the Commander-in-Chief *via* Niu-chwang.

In the morning of 24th July everything which could be procured in Port Arthur in the shape of salvage appliances was sent to Taché Bay, escorted by the *Novik,* the gun-boats, and destroyers. Towards eight o'clock the *Boyevoy* was towed past us stern first. The hole had been covered with collision mats. The salving of the *Burakoff* was quite hopeless. No sooner was the procession in the harbour than a fog came on as thick as milk. On 25th July we were at last relieved. When we reached the West Basin we looked forward to our time there as to paradise. The deck hands who had been all the time in "watch and watch" wanted a thorough rest. The engine-room staff had also had strenuous times, as the ship had to be kept under steam all the time. Besides, all the engines and boilers required a good overhaul. But all this came to nought. Early on 26th July the signal was made: "*Retvisan,* all cruisers and destroyers raise steam."

The engineers had just commenced opening up the machinery. They were taken unawares, but one must do them the justice to say that they were equal to the occasion. We were only half an hour behindhand in getting to sea. When we reached the roads at 1.30 p.m. the *Askold, Bayan,* and *Pallada* were already at anchor with nets out. The weather was hardly promising for an expedition. From time to time it rained so hard that our range of vision was reduced to one or two miles. The senior officer of these ships apparently thought the same. Before we had time to take up our berth he signalled to us: "Proceed into port." We turned round, and as we steamed in the other ships were taking in their nets. We had just secured to our buoys in the West Basin when it cleared up. The cruisers which had just weighed to come in, were ordered by signal from Golden Hill to proceed to Lunwantung and bombard the hostile positions.

For us this appeared to be an insult. We were despised, and were not to join in this. Our captain at once went to see the

Admiral and to ask for an explanation. He came back quite satisfied, and said that our going out at all was due to a misunderstanding. We were to have two days of complete rest, and overhaul our machinery and boilers. It was a fact that by force of circumstances throughout the last month the *Diana* had hardly had a day in peace. We had either been out in the roads or in the entrance. We had hardly gone up harbour when the despatch of all the cruisers had been decided upon. We were so weary that we looked upon the new order as an act of grace, and did not at all envy our comrades the laurels they might pluck meanwhile.

These were hard times indeed.

On 26th July the Japanese attacked our positions along the whole line. Their gun-boats and light cruisers supported them from seaward on both flanks. Our troops fell back before the enemy's first attack. It was said that owing to some misunderstanding, some of our positions had been evacuated almost without fighting. When the *Askold, Bayan*, and *Pallada* appeared and had chased away the small Japanese vessels which had been harassing our right wing, the situation changed. Fortune had apparently favoured us again. The *Bayan* succeeded during the long-range engagement in hitting the *Itsukushima* with an 8-inch shell. One of the Japanese destroyers was apparently also hit, and beat a hasty retreat. The cruiser *Tchiyoda* struck a mine. She did not sink, but was towed back to Talienwan in a dangerous condition. (She was repaired in the dock at Dalny.)

Our cruisers returned about 7.30 p.m. Semi-officially we were informed that all positions which had at first been evacuated were again in our hands.

All night long we heard the dull roar of guns from the land front. At daylight it increased in intensity. The rain had ceased and the fog lifted. At six o'clock on the morning of 27th July our gun-boats, the cruisers, and the *Retvisan* went out in support of our army. The Japanese attacked with fresh troops, but our people were so encouraged by yesterday's successes that they did not give way. Towards 11 a.m. the *Retvisan's* 12-inch guns began to speak. Their mighty roar drowned the whole din of battle. How glad we were to hear them! Our most fervid vows accompanied each round fired by the *Retvisan*.

On our right wing, which was supported from seaward, the situation was not so bad. On the other hand, the accounts from the left wing were not good. Opposite to Itchenza, where we had twenty-four field guns, the Japanese had got eighty into position. Moreover, the enemy was supported from seaward by his gun-boats. All ships landed their doctors and stretcher parties. Soon after noon the firing ceased. Towards three o'clock our ships returned to the roads, and came up harbour in the evening. At seven o'clock our neighbour, the *Bayan*, came to her berth in the West Basin. Even our experienced eyes did not notice at once that she was down by the bows, and had been damaged. Later we heard that just as the *Bayan* had reached the roads, she had struck a mine. Her water-tight bulkheads had stood, only the foremost stokehold was flooded. All the same, our only armoured cruiser was *hors-de-combat*.

"This is a further reason for our not going to sea. We must now wait until the *Bayan* is repaired."

I turned round to face the speaker, and had difficulty in restraining myself.

"You seem pleased at our misfortunes. Do you still dare to mock?"

He looked at me steadily with his grey eyes, half-respectfully, half-mockingly.

"By no means. I am only trying to discover at once the motive which will probably influence our leaders in their orders."

On 27th July the *Diana* suffered a severe loss in the person of Korostyeleff, the constructor attached to the ship, who had to be sent to hospital.

Korostyeleff was an indefatigable worker, and a first-rate engineer. He possessed thorough scientific training, and a rich practical experience. Whilst the cruiser was being built he was employed in the dockyard. In the mess the standing joke about him was that he was "personally acquainted" with every rivet in the ship. For the captain and executive officer he was more than the right hand. Korostyeleff had a fine presence, and at first sight he looked healthy. But the doctors said that he suffered from the heart and the nerves. The six months of war had had a bad effect on his health. He died in hospital at 1.30 a.m. on 28th July. His end was so calm and peaceful that the nursing sister on duty did not at once notice it.

Next day was the solemn funeral.

"My God!" thought I, "yet another bloodless victim of the war! How many fall thus without our knowing it?"

During the night of 28th July our troops fell back all along the line.

In the morning an immediate attack by the enemy was evidently expected. All ships were ordered to disembark landing parties. During the afternoon they were re-embarked.

Arrangements had been made "from above" to ensure that no news of the operations of the army could reach the garrison. Notwithstanding this, the news penetrated everywhere, into the town, into the fortress, into the squadron—by means of Chinese. We had quite accurate details about our failure at Va-fan-gu, and already on 15th July the rear-guard action of Haitchen was spoken of. Then came Tashichao, that is, the evacuation of Niu-chwang.

Hopes of any success on land became mere pious aspirations. On the other hand, a very decided rumour gained ground to the effect that a second squadron was being fitted out at Cronstadt, and that it might start any day. We did not quite believe this rumour. The sceptics said that we did not possess another "squadron," that it was possible to get together in a relatively short time a number of ships, both new ones and old ones reconstructed, but much time would be required to turn them into a "squadron." Only a homogeneous, well-drilled, well-organised squadron should be sent out. If any one imagined that a badly-organised "armada" would do as well—why it would hardly get as far as Port Arthur!

A small number of optimists tried to represent the situation more favourably: "It will take two or three months to collect the new squadron in the home ports," they said. "During that time something can be learnt; the remainder can be acquired on the way out."—"Indeed," was the reply. "A retriever cannot be trained on the way to a shoot. No; the Japanese have been training their squadron for eight years, without stinting the cost of keeping it in full commission. We have seen the results. Do you remember what Makaroff says in one of his books?—'One cannot hope to carry out in war anything which has not been learnt in peace.'"

I believe (I may be wrong) that there was no faith in our administration. The majority were of opinion that these rumours of a prospective arrival of a second squadron were chiefly intended as an excuse for our inactivity. They were to make us believe that we were saving up the ships against the arrival of the expected reinforcements. All this was not put forward openly, but one "read it between the lines" during all conversations.

"As soon as they begin to bombard us from the land side it will be all up with our squadron. The second squadron cannot arrive in any case before this happens. We must not shut our eyes to this danger. The fate of Port Arthur is sealed. If we want to save the squadron we must go to Vladivostock. If not we must risk annihilation in action, and at the same time cause the enemy as much damage as possible. It is criminal to leave the ships here to be pounded to pieces by the shore guns."

Many thought thus.

On 29th July, or during the night of the 30th (I can't say for certain, for in these times we simply lived on rumours), our troops evacuated the Green Hills, Takushan, and the Wolf Hills. The latter were given up almost without a struggle. All the same, we had some losses. It was said that they were caused by the Japanese firing into our flank during our retreat, causing much confusion in our ranks.

The real siege of the fortress may be counted as commencing on 30th July. From morning until 2 p.m. of that day the *Retvisan, Peresviet*, and *Pobieda* bombarded by indirect fire the valley of Lun-ho, in which the enemy were specially active.

The night of 31st July was disturbed. In the evening we got the signal: "Keep cleared for action during the night.—Landing parties to be kept ready—The battleships will open fire at daybreak.—*Novik,* gun-boats, and destroyers are to go out at 6 a.m.," etc.

The Japanese, however, did not attack, perhaps on account of the weather. We had almost incessant rain and fog.

On 1st August we were again guard-ship in the roads.

When the weather was particularly bad, one could hear strange remarks in the mess. The officers did not address me directly, but they "sounded," so to speak, by expressing their ideas in my presence. It was thus said that we should clear out of this place. That we should seize the opportunity when we could not be seen either from the shore or the sea, cast off from the buoys and break out to Vladivostock. If we are then annihilated, said some of them, well then we *are* annihilated. If, on the other hand, we do get through to Vladivostock, we can get new guns for the old ones, and then we shall still be good for something. Here we should simply be made prizes of.

Sometimes I pretended not to hear any of this, but occasionally I had to cry halt. I declared that if we did this, we should be deserting our post like a sentry. The admiral commanding the squadron was in a better position to judge of all the circumstances than we. If he did not go out he had his reasons. At a given moment the Admiral required all our forces for the decisive battle, every gun would then be of great value. No one contradicted me, but I felt and saw that the officers did not believe my words as to a decisive battle. As regarded the "great value of every gun," I received the laconic reply: "Except, of course, those we have sent on shore."

Yes, demoralisation was in full swing.

In these days a quite new and very sad defect showed itself in connection with our gun armament.

On one occasion when we were firing as usual at Japanese destroyers one of our 6-inch guns suddenly ceased firing. "What's the matter?" the captain shouted furiously, when he saw that the gun was being unloaded from the muzzle. "Has the cartridge again not been examined and fallen to pieces?"

"No, sir, it is not the cartridge," reported the officer in charge excitedly from the upper deck. "It is much worse! We can't get the projectile far enough in."

The following facts were then elicited. Ammunition had been sent out to Port Arthur in great haste, as it seemed likely that the communications of the fortress with the north might be cut off. In consequence of this a large batch of shell had not been examined at all, or only in part.

Of course the department making the issue could quote paragraph 527 of the instructions. These provide that the gunnery lieutenant is to stop the issue and report to the captain if any articles are found not to correspond exactly with the sealed pattern. With equal force the gunnery lieutenant could point out that he was unable to do this; that he was without any means, and, above all, lacked the requisite time for careful examination of all stores we drew from the local depots to fill up our deficiencies. The storekeepers at Port Arthur, again, were quite in their right when they maintained that they had received these shell from the factory and the central department at home, and that they also lacked means and time for gauging. In short, as usual, every one, that is, no one, was to blame, but the fact remained.

Our gunnery lieutenant was in great trouble over this discovery. We had always filled up our allowance of shell as they were expended. In the shell rooms the new shell had been stowed in the empty racks. It was impossible now to say which were the shell received before the war, and which were not. It was equally impossible now, in time of war, to make a careful examination of the whole of our projectiles. We could only do this by degrees, by unstowing a small number of shell at a time. We required time—but did we know how much time we still had at our disposal? That all depended on the enemy.

A further defect was discovered. I don't know whether it was in consequence of bad gauging or simply of bad metal. Our cast-iron shell (the cheapest and therefore the most numerous in our outfit) often burst on leaving the muzzle. When the *Gilyak* was firing at Japanese destroyers, and her projectiles passed close to us (when guard-ship), we afterwards frequently picked up splinters of the cast-iron shell on our decks in the morning. In the first instance, the neighbouring ships were endangered, but the gun itself could be disabled if a shell burst in the bore. Orders were therefore given to fire cast-iron shell only with practice charges (that is, half charges).

That was a sad order. We were no longer able to develop the full power of our guns. But, alas, it had to be!

On 2nd August we were directed to leave it free to such of our servants as had voluntarily enlisted to have their engagements cancelled with a view to getting away to Cheefoo by the next Chinese junk.

A sad premonitory symptom!

The Japanese were now not very active. They were probably busy building heavy siege batteries. The ships of the squadron fired at them from the basins indirectly, and tried to interfere with their work. In this way the fleet defended the fortress towards the land.

What irony!—The fleet was fighting on land!

On 4th August we were relieved in the roads and took up our berth in the entrance.

(*To be continued.*)

THE JAPANESE ARMY IN 1908.

(Translated by permission of the Minister of War from the *Revue Militaire des Armées Etrangères.*)

Continued from October JOURNAL, p. 1357.

CHAPTER III.

ARMAMENT. CLOTHING. EQUIPMENT.

Armament.

Infantry.—The Japanese infantry went through the war with the "Arisaka" rifle, model 1897. This weapon, which is an imitation of the Mauser, has a calibre of 6·5-mm. (·256-inch). It has a magazine holding 5 cartridges, and is provided with a sword bayonet.

After the war it was found necessary to renew the armament, as a great many rifles were worn out. The first idea was to introduce an automatic rifle, but after various unsuccessful trials this idea was abandoned. It was then decided to adopt a rifle still known as the Arisaka, but officially designated as the model of the 38th year of the Meiji (1905). It is, in fact, the old rifle with improvements suggested by experience gained in the war. The reserve army (*Koli*) remains armed for the present with the original weapon (model of 1897). The principal details of the new rifle are: Calibre, 6·5-mm. (·256-inch), the same as in the old rifle; length, without bayonet, 1·29 metre (4 feet 2·79 inches); the old rifle was 2 centimetres shorter; length of barrel, 82-cm., instead of 79-cm.; weight, without bayonet, 4·060 kilogrammes (a little over 8 lbs. 12 oz.). This is slightly heavier that the old rifle.

The object of the alterations has been to protect the breech mechanism against the entrance of dust and dirt, to strengthen certain parts, and to facilitate the handling of the weapon during intense cold. There has been no alteration in the bayonet.

The soldier always carries three cartridge pouches. These now open from back to front. The men are also provided with certain spare parts. The pouches hold 120 rounds, and another 80 rounds are carried in the knapsack (total, 200 on the person). When the soldier is relieved of his knapsack he is given an extra supply of ammunition. At Mukden the men of some regiments carried from 500 to 600 cartridges.

Cavalry.—The cavalry is armed with sabre and carbine. The calibre of the latter is the same as that of the infantry arm, and the new carbine has the same improvements. It is sighted to 2,000 metres instead of 1,500, and it would seem to be the intention to provide a bayonet.

General Arisaka has also invented a repeating pistol, on the same principle as the German Mauser pistol. It has an attachable stock. This pistol is carried by all officers, and by sergeants of cavalry, etc.

Field Artillery.—The Japanese artillery made the last campaign with an Arisaka field gun, capable of firing three or four rounds a minute; calibre 75-mm. (2·95-inch). It has no shields, and was not altogether satisfactory as regards stability in firing.

The mountain gun was of the same calibre, though of course much lighter. The gun and carriage separated into five pieces for transport.

Early in 1905 Messrs. Krupp received a first order for 400 75-mm. Q.F. guns. After the conclusion of peace the technical section of the War Office was on the point of concluding a fresh contract with the English firm of Vickers-Maxim for a field gun of 83-mm. (3·27-inch) calibre, weighing 1,960 kilogrammes (38½ cwt.), when the Krupp firm claimed priority, and the negotiations with the English establishment were broken off. The Japanese Government then finally adopted Krupp material for their artillery; or, to be more exact, Krupp supplies steel ingots to the Osaka arsenal, from which the guns are manufactured on Krupp's designs.

The new field gun is a long recoil quick-firer of 75-mm (2·95-inch) calibre, and is designated "Model of the 38th year of the Meïji (1905) make of 1905."

Later, in 1907, General Arisaka made some slight improvements in the Krupp gun, and the manufacture of this modified gun was commenced. It is known as the "Model of the 38th year of the Meiji make of 1907."

There are, therefore, in the Japanese Service three descriptions of 75-mm. guns, viz.: Krupp guns made in Krupp's own works; Krupp guns made at Osaka of Krupp steel on Krupp's design; and the Arisaka gun of 1907, made in the Osaka arsenal, and differing but slightly from the Krupp guns pure and simple. Of the latter (the Krupp guns) there are about 700 in Japan, and the batteries generally are armed with them. The number of Arisaka (1907) guns manufactured so far is but small.

The details of the field gun are as follows:—

Calibre, 75-mm. (2·95 inches);
Length (30 calibres), 2·192 metres (7 feet 2·39 inches);
Recoil on the cradle, 1·40 metres (4 feet 7·12 inches);
Extreme range (29° elevation), 8,500 metres (about 8,900 yards);
Initial velocity, 520 metres (1,695 f.s.);

Weight of gun and carriage, with shields, about 900 kilogrammes (say 17¾ cwt.);
Weight of projectile (both shrapnel and common shell), 6·5 kilogrammes (14·3 lbs.);
Bullets in shrapnel, 210 of 12·5 grammes (36½ to the pound);

The breech is closed by a wedge in the Krupp gun and by an interrupted screw in the Arisaka gun.

Fixed ammunition. The extraction of the cartridge case is automatically effected in opening the breech.

The proportion of common shell (high explosive) to shrapnel is 1 to 3.

The carriage is composed of two parts, the carriage proper and the top cradle. The latter carries the gun and recoils with it. Recoil is checked by a hydro-pneumatic brake. The cradle is returned to position by metallic springs in the Krupp gun, and by compressed air in the Arisaka. A spade is fixed to the trail.

The shields have a thickness of 3·6-mm. (about one-seventh of an inch), and are made in two pieces, the upper part fixed and the lower moveable.

The sight is furnished with a telescope, magnifying about three diameters. It is graduated to 6,200 metres (about 6,800 yards), but with the attached clinometer it is possible to fire at ranges up to 7,350 metres (about 8,100 yards). The fuse is graduated up to 7,900 metres (about 8,700 yards).

The limber holds 36 rounds, and can carry three gunners. Its weight, loaded and equipped, is 795 kilogrammes (about 15½ cwt.).

The weight of the gun and limber together is about 1,695 kilogrammes (33¼ cwt.).

The wagon body holds 60 rounds; the wagon and its limber together therefore carry 96 rounds.

The gun and wagon are each drawn by six horses.

The Japanese artillery officers are of opinion that a rate of fire of five rounds a minute is fully sufficient in action under ordinary circumstances, but a much quicker rate of fire can be obtained if necessary.

A field artillery regiment (6 batteries) is provided with 15 sets of telephone apparatus and 9 telemeters.

With regard to the new Arisaka *matériel,* of which only a few guns have been issued, it would seem that not only is the new *matériel* not ready, but that owing to the reductions in expenditure mentioned at the beginning of this article, its construction is likely to be considerably delayed.

The mountain gun has not been changed, though from the experience gained in the war some slight improvements have been made in the way of strengthening the *matériel* generally. A Q.F. mountain gun has, however been designed.

The heavy (field) artillery appears to be armed with 10·5-cm. guns, and howitzers of 12 and 15-cm. (approximately

4-inch, 4½-inch, and 6-inch pieces). We shall see in the chapter on the organisation of the Army how the heavy artillery is distributed.

Besides the heavy guns and howitzers accompanying the troops in the field, there will be one or more siege trains.

The 10·5-cm. (4·13-inch) gun is a new piece, due to General Arisaka, and made at the Osaka arsenal. It is a long recoil, shielded, quick-firer, and is designated the 10-cm. gun, model of the 38th year of the Meiji (1905). This gun fires a 40-lb shell, with initial velocity of 1,771 f.s., and its extreme range is 11,000 yards. The fuse is graduated to 10,340 yards. The rate of fire is about four rounds a minute. The shields are about one-fifth of an inch in thickness. The weight of the gun and carriage is 44 cwt., and it is drawn by eight horses. The wagon (carrying 36 rounds) is drawn by six horses.

The 12-cm. (4·62-inch) and 15-cm. (5·90-inch) howitzers have been partly furnished by Krupp and partly made at Osaka. The former fires a shell of 44 lbs., and is sighted to 5,680 metres (6,250 yards). The latter fires a shell of 79 lbs., and is sighted to 5,890 metres (6,480 yards). The light howitzer is drawn by six horses and the heavy howitzer by eight horses.

Siege Trains.—It is proposed to furnish these with new pieces of 21-cm. (8·27-inch); also with Colt machine guns, calibre 1·25-cm. (·492-inch), the bullets of which are capable of penetrating mantlets, sand bags, etc.

Coast Artillery Matériel.—At the present moment the armament of the coast defences is rather miscellaneous. It comprises mortars of 9, 15, and 24 centimetres; howitzers of 9, 10·5, 12, 15, and 28 centimetres, and guns of 9, 10·5, 12, 15, 19, 24, and 27 centimetres; some from Creusot, some from Krupp's works, and others made at Osaka. It has been decided, however, that eventually guns of three calibres only are to be employed. These will be: a Q.F. 15-cm. (6-inch) gun; a gun of 27-cm. (10·63-inch); and a 12-inch gun (305-mm.). All these guns will have a length of 45 calibres, and will be protected by armour plating. As a general rule the Japanese prefer disappearing mounts to armoured turrets, which are very costly and require delicate handling.

Machine Guns.—The Hotchkiss has been definitely approved of for the Army, with certain improvements suggested by the experience of the late war. The principal are:—

(*a*) The shield has been done away with; it was found to add too much to the weight in offensive movements, and to be of comparatively little value when on the defensive. In future machine guns are to obtain shelter by taking advantage of the ground, or epaulements will be hastily thrown up.

(*f*) The machine guns now being issued can be rotated on their stands through the whole circle of 360°.

(*c*) It is no longer necessary to press continuously on the stud while firing. The stud can be held back by a catch attached to a spring. The firer resumes control of the firing by disengaging the stud.

(*d*) The limit of elevation and also of depression has been increased.

The machine guns issued to cavalry and to infantry are identical. Both have tripod stands, and are carried on pack horses. Wheeled carriages for machine guns have been completely abandoned. The pack saddle carries the gun on one side, the tripod and tool box on the other. The ammunition is carried in boxes of 1,200 rounds, two on each side of a pack saddle.

Every infantry regiment is provided with a battery of six machine guns, divided into three sections of 2 guns each, and commanded by a captain or a lieutenant. Each machine gun detachment consists of a sergeant or corporal and six men. There are 24 ammunition horses to each battery. Every gun is accompanied by one ammunition horse, the remainder form a second line.

The regulations insist on the offensive character of the machine gun. These adjuncts should accompany their infantry everywhere, even into the firing line, and should always be ready to take part in the fight; but they are on no account to attempt the *rôle* of artillery.

The two independent brigades of cavalry have each a battery of eight machine guns, officered by a captain and two lieutenants, and capable of being divided into two half batteries, each of four guns. These machine guns are intended to follow the cavalry everywhere. They are a powerful auxiliary in dismounted fighting. The battery of eight machine guns has 32 ammunition horses, divided into three echelons. The method of carrying the gun and ammunition is the same as in the infantry mitrailleur batteries.

The zone of effective fire of machine guns is between 200 and 1,500 metres. At night the actual effect is evidently problematical, but the moral effect is always considerable. When hostile artillery has got the range of machine guns the regulations prescribe a change of position. The guns can be easily moved by the detachments, one man to each leg of the tripod.

Hand Grenades.—The Japanese have perfected the hand grenade, which both sides employed freely in close fighting during the late war. The grenade now in use is an iron tube about six inches in length, containing a little over three ounces of explosive. It is fitted with a percussion fuse, which explodes the grenade on striking.

Arsenals.—Japan now makes for herself almost all her requirements in the way of armament, equipment, and clothing. The principal arsenals are at Tokyo and Osaka. They are under the Commission of Arms and Munitions of War at Tokyo.

The Tokyo arsenal is principally engaged in the manufacture of small arms. The Japanese service rifle is the invention of General Arisaka, President of the Artillery Committee, who went through a course of study at Spandau. Tokyo also makes swords and bayonets, cartridges (10,000 a day), tools, cooking utensils, bicycles, etc. The powder mills of Itabashi and of Meguro, which make cordite and a powder resembling the French "powder B," are attached to the Tokyo arsenal. There is also an establishment for making the high explosive "Shimose" in the island of Shinragawo.

The Osaka arsenal makes guns and gun ammunition. In the manufacture of the former steel ingots from the Krupp and Creusot works are largely employed. The Osaka arsenal also makes gun carriages and wagons, wagons for the engineer service, torpedoes and torpedo-tubes, and the machines used in the various factories.

The powder mills and explosives factory at Uji are attached to the Osaka arsenal, as are also the establishment for the repair of small arms and the saddlery and bootmaking establishments, all at Moji.

CLOTHING.

The experience gained in the late war has caused the Japanese to make certain changes in the clothing of their soldiers. In future the clothing of non-commissioned officers and men, and of officers in field service dress, will be khaki-coloured; of cloth in winter and of linen in summer. The dress comprises: a cap (the shape has been altered; the new cap is not unlike that of the Russians); a loose tunic with pockets and one row of buttons; an overcoat with pockets and a detachable hood; breeches or trousers; ankle boots and putties. The badges of rank are on the shoulder straps; the regimental numbers on the collar tabs. The field service dress of the officers closely resembles that of the men. They continue, however, to wear their old dark uniforms in full dress and in ordinary undress, at least for the present. The cloth used in the Army is made in a special factory under the War Office.

EQUIPMENT.

The Japanese knapsack is like the old French knapsack, being covered with cowskin, hair outwards, on a light wooden frame. It weighs, empty, about 4½ lbs. The necessaries carried in the pack include a change of linen, housewife, etc. Two days' rations, consisting of six packets of rice, two tins of preserved meat, sugar and tea, are also carried. Further, each man has 80 cartridges in his knapsack, besides the 120 in his pouches. The field blanket is rolled round the knapsack with a shoe on each side. The overcoat and portion of the tent canvas are rolled up beneath. The entrenching tool is fastened below or on one side.

When going into action the men leave their packs behind, the entrenching tool being then transferred to the belt, in front of the bayonet. The mess tin, of aluminium, slightly curved, and having a capacity of rather more than three pints, is fastened to the back of the knapsack.

The knapsack, packed, with the entrenching tool, weighs about 31 lbs.

The soldier carries besides: An aluminium drinking vessel, a packet of "first-aid" dressing, two wicker baskets containing one day's rations (except biscuit), and also a haversack. The latter contains an aluminium quart pot, the biscuit ration, a bottle of medicine, soap, towel, tooth brush and powder, pipe and tobacco, paper, etc.

The belt, of brown leather, supports three pouches containing 120 rounds of ammunition.

The total weight ordinarily carried by the Japanese soldier, including clothing, equipment, arms, ammunition, and food, amounts to:—

Winter kit—68 to 70 lbs. (without extra cartridges, 66 lbs.).
Summer kit—66 lbs. (without tent canvas, 62½ lbs.).

This burden is no trifle, and to lighten the soldier when fighting, the kit is reduced to what is absolutely necessary, that is to say, rations, ammunition, change of linen, soap, etc. These are carried in a long bag of khaki cotton called *seoi fukuro,* which is passed over the right shoulder and under the left arm, the ends being knotted on the chest. The mess tin is either inside or attached below. The entrenching tool is placed in the waist-belt, and the overcoat, rolled in the tent canvas, is carried over the left shoulder, crossing the *seoi fukuro.* The knapsack is left behind or brought along on the baggage wagons. The total weight of the reduced equipment is about 55½ lbs. with winter clothing, and about 42½ lbs. with summer clothing.

Entrenching Tools.—The entrenching tools carried by the Japanese soldiers are much the same as those used in the French Army. Every infantry soldier carries a tool of some kind, the proportion being two-thirds shovels to one-third picks, hatchets, and saws. The very extensive use made of wire entanglements by the Russians induced the Japanese to distribute no less than 30 clippers among the men of each company. The fact of having been chosen to carry one of these clippers was considered to be equivalent to a certificate of daring.

The following full-sized entrenching tools are carried as a reserve on pack animals, as part of the *train du combat,* viz., 43 shovels, 16 picks, 8 axes; total 72.

Cavalry have 12 or 16 hatchets and jointed saws per squadron, carried by the men.

The engineers have 215 entrenching tools per company, carried by the men, and a reserve of 148 per company in the engineer park.

The artillery are provided with 85 tools per battery.

Field Kitchens.—Cooking utensils are carried by the regimental train on pack animals. In Manchuria the troops also made use of all the cooking utensils they could find in the farms and Chinese houses. Each company also possesses a cooking equipment consisting of a portable stove (or cooking range), with a caldron and other accessories. The whole can be carried on two horses. The caldron has a capacity of nearly 12 gallons, and weighs about 37½ lbs. A battalion has four complete cooking equipments, carried on 10 horses, of which 2 are for additional caldrons. A squadron of cavalry and a battery of artillery have each one complete equipment carried on 2 horses. The cooking equipments can also be carried on carts, two to a cart.

(*To be continued.*)

IMPENDING WAR.

(*Résumé* of an article appearing in the Russian military journal *Razviedchik,* of 3rd August, 1909.)

Contributed by the General Staff.

NO military man who studies contemporary events, can have much doubt that the Russian withdrawal in the Servian question has made war more imminent than it was before, rather than the reverse. Russia at present stands upon that slippery slope of concession which leads to war. She does not desire war, and is not prepared for it, and Heaven alone knows when her army will attain the ideal standard of excellence set before it in the press, etc. Neither do our neighbours desire it, if only on account of the enormous sacrifices in men and money, exacted by modern war. If to that consideration we add the chances of an unfavourable result, and (leaving moral considerations on one side) evaluate the purely strategic elements of the situation, we find the net result to be very far from favourable to those neighbours of ours.

Even granting that the Germans have better armament, equipment, training, etc., these are, after all, only means to an end, whereas the end itself is such as to overwhelm any enemy. What is the use of elaborate means if the end in view be unattainable?

War is no longer a duel between armies, but a life and death struggle between nations. Nothing short of paralysing the whole life of a country (to such an extent that any prolongation of it implies national death) constitutes final victory.

Owing to the vast extent of Russian territory, the country's material resources for defence are almost infinite. The normal life of Russia as a whole would not be affected by the loss of any of her frontier provinces. An army could, no doubt, advance into the interior of the country, but the result of such a proceeding (in view of the enormous size of modern armies and their extreme sensitiveness as to their communications) would be even more disastrous than in times gone by. And what would be the object of such a march? The occupation of any particular point is of no strategic importance in itself, unless the national life is thereby paralysed. It is impossible to believe that Germany can seriously contemplate an invasion of Russia.

If St. Petersburg were occupied by the Germans, or Kiev by the Austrians, other parts of Russia, so far from being affected as to their productive powers and resources, would hardly be aware of the fact. Russia is so vast. But if it is impossible to imagine a given moment when Russia would be exhausted, it is far otherwise in the case of Germany and Austria. The inference is, therefore, that in any future war, Russia would risk comparatively little while her opponents would be staking their national existence.

There has lately been a great outcry in the press, and attention has been called to various weak points, the fortification question, etc. Even General Kuropatkin's demonstration that 100,000 men could be concentrated within a week, for the defence of St. Petersburg, does not satisfy a correspondent of the *Novoe Vremya.* We will not discuss the point as to the possibility or otherwise of the Russian capital being occupied by the Germans, but confine ourselves to pointing out that the effect of their doing so would be comparatively unimportant.

The march of 150,000-200,000 German troops upon St. Petersburg, would be of no strategic importance whatever, apart from the voluntary dispersion of force. The occupation of the capital would have little or no effect upon the rest of the country, and least of all upon an undefeated army in the field, based upon Moscow or some other point. The more German troops there were in St. Petersburg, the fewer there would be at *the decisive point.* If beaten in the field, they would quit St. Petersburg fast enough. Even a successful war calls for sacrifices, and heavy ones; but it would be no great matter if the Germans chose to spend a summer in St. Petersburg, or at the watering places in Finland.

If we now turn to the moral side of the question, everything will depend upon firm determination in high quarters. The Russian army is a good one, and when fighting for its home country will achieve far more than was the case during the recent war. There is reason to believe that the strong points of the Russian army are fully appreciated in Germany—even among violent Russo-phobes. There are some general officers in the Russian army, to whom the command could safely be entrusted, and under whom others would soon learn the art of victory—as was the case with Suvorov and his generals.

An important question is that of fortresses, and the part they are to play in a future war. The advocates of fortification point to the achievements of Sevastopol, Plevna, Port Arthur, and other fortresses, and frequent mention is made of armed camps as bases of manœuvre. But there is no fortress which cannot be turned, while experience shows that a force occupying a fortress becomes stationary and is lost for the purposes of operations in the field. If General Kuropatkin, instead of locking up a whole army corps in Port Arthur, had concentrated the whole of his forces against Kuroki, there might have been no Wa-fang-kou, no Liao-yang, no Mukden. The largest and best modern fortresses may never be attacked, their fate being decided elsewhere—in the field. The fortifications in the neighbourhood of Warsaw can only be of importance with regard to a sudden attack. But if, instead, Poland were invaded by, say, two German armies, from the west and north-west, and by an Austrian army from the south-west, those fortifications would not only be useless but positively detrimental, owing to the dispersion of troops caused thereby. Would it not be better to fall back in good time, and husband our forces? A hostile occupation of a few Russian provinces (which could not, in any case be prevented) is less serious than exposing the Russian army to the attack of an enemy in superior force.

In connection with this point, mention must be made of the great importance of the extensive *Polies* district, which, from its position, forms a wedge driven into the theatre of any operations on the western frontier of Russia. The sides of this wedge approximately coincide with the two main roads Moscow-Brest (Litovsk) and Kiev-Brest (Litovsk). Though little attention has been paid to this neighbourhood in the past, it might easily become of the first importance. Owing to the swampy soil, its wooded character, and sparse population, the *Polies* district can only be traversed by a few narrow roads, and is quite impassable for an army. Any invading force, on reaching Brest (Litovsk), would have to take either a north-easterly direction towards Moscow, or a south-easterly direction towards Kiev, or both at once. In any case, an advancing force would be exposed for nearly a couple of hundred miles to attacks upon its flanks within the *Polies* district. It would not be difficult to convert the country referred to into an effective base for Russian operations, though still inaccessible to an enemy. The railways are almost sufficient already; all that would be necessary is to improve the country roads, and establish a number of supply depôts. In fact, the district in question (which forms a sort of barrier between what would be the northern and southern theatres of operations) would constitute an admirable base for a small army operating within it, and capable of being rapidly transferred from one theatre to the other—at the decisive moment.

We have nothing to fear from an enemy—only from our own lack of spirit. War is at hand, and it is useless to attempt to postpone it by a peace-at-any-price attitude. It is not within our power to prevent a rupture; the only thing is to prepare for it, and to be ready for war at any moment.

NAVAL NOTES.

Home. The following are the principal appointments which have been made: Rear-Admiral— F. E. Brock to Command of the Third (Portsmouth) Division of the Home Fleet. Captains—C. W. Winnington-Ingram to "Argonaut," for charge of special service vessels, Portsmouth; M. R. Hill to "Hawke"; S. St. J. Farquhar to "Kent"; G. R. A. Grant to "Niobe"; F. D. Gilpin-Brown to "Jupiter"; R. E. Benson to "Hermione"; H. D. Wilkin, D.S.O., to "Antrim."

The first-class armoured cruiser *Inflexible,* flying the Union flag of Admiral of the Fleet Sir E. H. Seymour, G.C.B., O.M., G.C.V.O., arrived at Spithead on the evening of the 18th ult., from attending the Hudson-Fulton Commemoration at New York; Sir E. Seymour struck his flag at sunset on the 19th, and the *Inflexible* has rejoined the First Cruiser Squadron.

The first-class battleship *Venerable* commissioned on the 19th ult. for service with the Atlantic Fleet, where she has relieved the *Cornwallis,* which in her turn has joined the Mediterranean Fleet, relieving the *Canopus,* the last-named ship being ordered to return to England. The first-class battleship *Hindustan* paid off at Portsmouth on the 4th ult., and recommissioned the following day for a further term of service with the 2nd Division of the Home Fleet.

Launches.—On the 28th ult. the launch of the first-class armoured cruiser *Indefatigable* took place at Devonport. The *Indefatigable* is the fourth of the so-called *Dreadnought* cruisers to take the water, having been laid down on 23rd February this year, and in the eight intervening months nearly 7,000 tons of material have been built into her. Her exact dimensions have not been published, but they are believed to be as follows: Length, 600 feet; beam, 80 feet; mean draught, 26 feet 5 inches on a displacement of 19,000 tons, as against the 17,250 tons of the three earlier ships. Her engines are to develop 45,000-I.H.P., to give a speed of 25 knots, with a coal capacity of 2,500 tons. The armour belt is believed to be 8 inches, as against 7 inches of the earlier ships, while the armament will consist of eight 45-calibre 12-inch guns, with a secondary armament of twenty 4-inch guns, although according to some reports her secondary battery will be composed of 6-inch guns.

On the 28th ult. also took place the launch of the second-class cruiser *Gloucester* from the yard of Messrs. Beardmore, at Dalmuir-on-Clyde, and on the 30th ult., from Messrs. Vickers' yard at Barrow, that of the second-class cruiser *Liverpool.* Both of these vessels belong to the new "City" class, their dimensions being as follows: Length, 453 feet; beam, 47 feet; mean draught, 15 feet 3 inches, with a displacement of 4,820 tons. The armament will consist of two 6-inch and ten 4-inch Q.F. guns, with two 18-inch submerged torpedo-tubes on the broadside. Their Parsons turbine engines are to develop 22,000-I.H.P., to give a speed of 25 knots. For protection there will be a curved steel protective deck extending the whole length of the ship, while the coal bunkers are also arranged to give further protection to the machinery.

The Dilke Return of British and Foreign Fleets.—The "Dilke Return" [Parliamentary Paper, No. 277], "showing the Fleets of Great Britain, France, Russia, Germany, Italy, United States of America, and Japan, which want of space has prevented our giving an abstract of earlier, is in the customary form.

The following explanatory note is attached :—

"1. This Return shows all battleships and armoured cruisers of each Navy which have been launched since 31st March, 1889; in the case of other classes all vessels are shown which still retain their armaments, and are not for sale. A fair comparison between the older vessels of each Power may be obtained by reference to their respective ages, displacements, armaments, etc.

"2. Vessels are arranged in classes as follows :—

Battleships.
Coast-defence vessels (armoured).
Cruisers (armoured).
Cruisers (protected), 1st class.
Cruisers (protected), 2nd class.
Cruisers (protected), 3rd class.
Cruisers (unprotected).
Scouts.
Torpedo vessels.
Torpedo boat destroyers.
Torpedo boats.
Submarines.

"3. Vessels built are shown separately from those building, and vessels are not transferred from the "building" to the "built" section until they have completed their trials and are ready for commissioning.

"4. In each class, vessels are arranged in types, the latest designed type being placed first in the case of those built, and last in the case of those building.

"5. A nominal table prefaces each class.

"6. In the column headed "horse-power," the figures are to be taken as representing maximum I.H.P. (= indicated horse-power) except where they are followed by the letter T, which indicates that turbine machinery is fitted."

The following is a summary of the different classes of ships :—

Battleships.—Great Britain, 53 built, 6 building; France, 18 built (including 1 condemned), 6 building; Russia, 7 built, 8 building; Germany, 32 built, 10 building; Italy, 10 built, 1 building; United States, 26 built, 6 building; Japan, 14 built, 4 building.

Coast-defence Vessels.—Great Britain, *nil*; France, 10; Russia, 2, Germany, 11; Italy, *nil*; United States, 11. None building.

Home

Armoured Cruisers.—Great Britain, 38 built, 1 building; France, 20 built, 2 building; Russia, 4 built, 2 building; Germany, 8 built, 4 building; Italy, 7 built, 3 building; United States, 15 built; Japan, 11 built, 2 building.

Protected Cruisers (First-class).—Great Britain, 18; France, 5; Russia, 7; Germany and Italy, *nil*; United States, 3; Japan, 2. None building. Second-class.—Great Britain, 38 built, 5 building; France, 12 built; Russia, 2 built; Germany, 21 built, 7 building; Italy, 4 built; United States, 16 built; Japan, 10 built, 1 building. Third-class.—Great Britain, 16; France, 11 (including 1 condemned); Russia, 2; Germany, 12; Italy, 12; United States, 2; Japan, 8. None building.

Unprotected Cruisers.—Great Britain, 2 building; Russia, 2 built; Germany, 11 built; Italy, *nil*; United States, 10 built; Japan, 7 built.

Scouts.—Great Britain, 8 built; United States, 3 built; other Navies, *nil.*

Torpedo Vessels.—Great Britain, 18, depôt ships for destroyers 3, depôt ships for submarines 2; France, 12 (including 1 to be condemned and 1 special service vessel); Russia, 6; Germany, 1; Italy, 5; United States, 2; Japan, 1, and 1 depôt ship for submarines. None building.

Destroyers.—Great Britain, 146 built, 25 building; France, 56 built, 16 building; Russia, 97 built, *nil* building; Germany, 73 built, 13 building; Italy, 17 built, *nil* building; United States, 20 built, 15 building; Japan, 55 built, 3 building.

Torpedo Boats (Formerly Coastal Destroyers).—Great Britain, 30 built, 6 building. General List.—Great Britain, 80; France, 262; Russia, 84; Germany, 83; Italy, 109; United States, 30; Japan, 69. Building, *nil.*

Submarines.—Great Britain, 45 built, 23 building; France, 49 built, 49 building (of which 24 are not yet actually commenced); Russia, 24 built, 11 building; Germany, 4 built, 4 building; Italy, 7 built, 2 building; United States, 12 built, 16 building; Japan, 8 built; 2 building.

France. The following are the principal appointments which have been made: Vice-Admirals—L. A. Caillard to be Inspector-General of Home Squadrons: R. J. Marquis to be Inspector-General of *Matériel;* P. Germinet to be Inspector-General of Schools and Seamen's Depôts; J. A. Philibert to be Inspector-General of Submarine Defences; H. A. Jauréguiberry to be Maritime Prefect (Commander-in-Chief) of the 5th Arrondissement Maritime (Toulon); M. I. Aubert to be Commander-in-Chief of the Second Squadron. Rear-Admirals—M. I. De la Croix de Castries to Command of the Naval Division in the Far East; J. C. Gaschard to Command of the 2nd Division of the First Squadron; J. L. Le Pord to be Member of the Technical Committee of the Navy; L. J. Berryer to Command of the 2nd Division of the Second Squadron; P. A. Le Bris to Command of the Gunnery School Division; A. Guillon to Command of the Torpedo Schools Division; M. J. Baudry-Lacantinerie to be Director of the Superior School of the Navy. Capitaines de Vaisseau—V. B. Senès to Command of the Moroccan Naval Division; F. Z. Jan-Kerguistel to Command of the Indo-China Naval Division; J. P. Rochas to "Henri IV."; J. V. Pradier to "Victor-Hugo"; P. J. Darrieus to "République"; B. M. Morier to "Charlemagne."—*Journal Officiel de la République Française.*

France.

Duties of the Inspector-Generals.—The decree creating the new Admiral Inspector-Generals appeared in the *Journal Officiel* of the 8th September, the four Inspectors being charged with the following duties :—

Inspection of Home Squadrons.
Inspection of Submarine Defences.
Inspection of *Materiél.*
Inspection of Schools and Seamen's Depôts.

The Vice-Admirals Inspector-Generals are *ex-officio* members of the Superior Council of the Navy, and the Inspector-General of *Matériel* is also President of the Technical Committee of the Navy. This is very similar to the system of Inspector-General established by M. Barbey when Minister of Marine in 1890, which, however, only lasted about two years, being discontinued on account of friction and conflict of authority with the Admirals commanding the squadrons. The new decree announces that a circular will shortly be issued defining the different duties; but it is considered a delicate matter, and for smooth working will require much tact and some abnegation from all concerned.

The Distribution of the Fleet.—The following is to be the new disposition of the fleet in commission :—

Home Fleet.

The names "Mediterranean Squadron" and "Northern Squadron" will be discontinued, and "First Squadron" and "Second Squadron" substituted.

Each home squadron will comprise : one squadron of 6 battleships, one division of 4 armoured cruisers, one flotilla of 12 destroyers, divided into two divisions, each under the command of a Capitaine de Frégate, and one first-class cruiser.

All the above will be fully manned. To each squadron is also to be attached a spare battleship and a spare armoured cruiser, half manned.

The ships on the Moroccan coast cease to belong to the home squadrons, and form an independent division, under command of a Capitaine de Vaisseau, senior officer.

The following is to be the composition of the home squadrons:—

First Squadron.

6 battleships : *Patrie, République, Démocratie, Justice, Liberté, Verité;* 4 armoured cruisers : *Jules Ferry, Jules Michelet, Ernest Renan, Léon Gambetta*, and, as repeating ship, the *Guichen;* 12 destroyers : *Obusier, Tromblon, Standard, Mortier, Fanion, Baliste, Sape, Pierrier. Stylet, Fleuret, Trident*, and *Branlebas;* spare battleship and cruiser : *Suffren* and *Victor Hugo.*

Second Squadron.

6 battleships: *Saint Louis, Gaulois, Charlemagne, Bouvet, Carnot, Jauréguiberry;* 4 armoured cruisers: *Marseillaise, Gloire, Amiral Aube, Condé*, and repeating ship the *Chateaurenault;* 12 destroyers : *Claymore, Sabretache, Carquois, Coutelas, Cognée, Fanfare, Oriflamme, Hacke, Gabion, X, Y, Z;* spare battleship and armoured cruiser, *Charles Martel* and *Dupetit-Thouars.*

France.

Divisions on Foreign Stations.

The divisions of the Far East and Pacific are to form one division composed of 3 armoured cruisers, but there will be no change in the disposition of smaller vessels detailed for special purposes.

Schools of Instruction.

The gunnery school ships are constituted a divisional command under a Rear-Admiral, in direct correspondence with the Minister of Marine. The union in one command of the torpedo schools is under consideration.

Ships in Reserve.

The coast-defence battleship *Henri IV.* will replace the *Acheron* at Biserta; of the 8 other coast-defence battleships, 4 will be put out of commission, 1 will be used as a tender to the gunnery school to replace the *Descartes*, and 3 will be appropriated as depôt ships for flotillas of torpedo boats and submarines.

Flotillas of Torpedo Boats and Submarines.

The only change will be the placing of the flotillas of Dunkerque, Cherbourg and Toulon, under the superior command of a Capitaine de Vaisseau.

Artillery Naval Engineers.—A *projet de loi* has for some time been before Parliament for creating a Corps of Artillery Engineers for the Navy, under the direct orders of the Ministry of Marine; but though passed through the Senate, it has not yet come before the Chamber, and there seems no prospect of its becoming law during the present session. Hitherto the naval ordnance department has been staffed exclusively by officers of the *Artillerie Coloniale*, and in consequence of the above delay it is proposed that the old system be continued, at any rate for another year. The Minister of War, in consultation with the Minister of Marine, has agreed to this course, and has directed that the officers and men of the *Artillerie Coloniale* so employed be dispensed from their turn of foreign service for another year.

The Budget for 1910. — The Budget de la Marine for 1910, as rectified by the new Minister of Marine, has been under the examination of the Commission du Budget. The total credits asked for amount to 371,475,862 francs (£14,859,034), being an increase of 29,980,204 francs (£1,199,208) over the estimates as prepared by M. Picard. The vote for provisions has been somewhat increased, so as to provide an increased ration for the seamen, and there is an increase to the *personnel* of the naval hospitals. As regards *matériël*, 1,150,060 francs (£46,000) is asked for increasing the reserve of stores for the fleet. Six (750-ton 31-knot) destroyers are to be built similar to those laid down in 1909, half in the arsenals and half by contract, and two destroyers of 450 tons are to be built at Rochefort and two 200-ton torpedo boats by private firms. No large ships are contemplated at present. There is also money provided for increasing and renewing machinery and

France.

tools in the arsenal. The increase in the vote for artillery is, however, the most important, 39,822,500 francs (£1,569,020) being asked for instead of 21,822,500 francs (£872,880) as before, the increase being for hastening construction and for larger supplies of ammunition.—*Le Temps* and *Le Vie Maritime*.

United States.

Bids for New Battleships.—The bids for the two new battleships, Nos. 32 and 33, or, as they are to be known, the *Arkansas* and the *Wyoming*, were opened on 18th August, with the result that the Cramps and the New York Shipbuilding Company are supposed to have made the successful bids. The Cramps put in two bids that were lower than any others, but as but one ship can go to any one firm, the next low bid, that of the New York Shipbuilding Company, is likely to be the one that will be accepted. These bids are under Class 1, where all bid on the same specifications, which call for Babcock and Wilcox boilers and Parsons turbines. The other bids, in which provision was made for the adoption of Curtis turbines and with the Department's selection of power, are practically out of the final consideration, as the lowest bids appeared in those made under Class 1.

The plans on which these two ships are to be built call for 545 feet length, 93 feet beam, 28 feet 6 inches draft, 26,000 tons displacement, 33,000-H.P., 20½ knots speed, with 3,000 tons coal supply and an armament of twelve 12-inch guns, twenty-one 5-inch, and two torpedo-tubes. The armour is 11-inch on belt and barbettes and on sides 8-inch, and the ships are to carry a complement of 1,100 officers and men. All the 12-inch guns are to be carried in turrets set on the median line of the ship. Two of the turrets will be set forward on the forecastle deck, which will have twenty-eight feet freeboard, and the guns in the first turret will be thirty-four feet above the water, and those of the second turret about forty feet. Aft of the second turret will be the conning-tower, and then will come the fore fire-control tower or woven wire mast, with searchlight towers carried on it. Next will come the forward funnel, on each side of which will be two small open rod towers with strong searchlights. Then comes the main fire-control tower and the after funnel and another open tower with searchlight. The two woven wire towers are 120 feet high and about forty feet apart. The four remaining turrets are aft of the main funnel, the third turret having its guns thirty-two feet above water; those in the other turrets are about twenty-five above the water.

The guns will be the new 50-calibre type. All twelve can be swung in broadside fire over a wide arc, and four can be fired dead ahead and four also dead astern. It was by the decision of the Department that Parsons turbines were designated for use. The fact is recognised that it is impossible to determine within any reasonable time whether the Curtis turbine has a superiority over the Parsons type. There is some expectation that the trials of the *Salem* may develop some surprises as to the efficiency of the Curtis turbine, but this will not be decided for many months to come, and meantime the new ships must be laid down and built. And even then the possible superiority of the Curtis turbine is speculative at this time. It was, therefore, thought wiser, in view of all consideration, to decide on the Parsons turbine.—*Army and Navy Journal.*

United States.

Prizes for Engineers of the Navy.—The Secretary of the Navy has issued a general order establishing the conditions for prize money competition in engineering. The competition will be under the direction of the Bureau of Navigation, through the office of target practice inspection. The order, in part, follows :—

"The Department has determined to establish yearly competitive steaming contests between battleships, armoured cruisers, torpedo-boat destroyers and torpedo-boats. The rules for competitive steaming are laid down to insure fair competition, and must be rigidly adhered to as the first requisite of any successful competition.

"In order that progress may be made in this branch of training afloat it is directed that at the end of each yearly competition each commanding officer and senior engineer officer will submit a report setting forth any methods adopted to increase economy that they may deem worthy of note, and also any suggestions looking to the improvement of the rules as laid down. It is strictly forbidden to endeavour to save coal by restricting the use of power necessary for the proper training of the *personnel*, the general health of the crew and efficiency of the ship.

"The standards for the different classes of vessels have been established from experience gained in the past and from data obtained from past performances of the battleships and armoured cruisers; and while certain ships may be favoured in some instances every effort will be exerted by the Department to adopt such measures in improving the machinery as are demonstrated to be necessary in order to even conditions.

"The winning vessels will receive suitable trophies, which will be carried for the following year in some conspicuous place, and the name of the vessel, with the year she won it, will be inscribed on each trophy. The commanding officer and engineer officers of the winning vessels will receive commendatory letters from the Department, copies of which will be filed with their records. Money prizes will be given to the men of the engineer's force of the winning vessels, as set forth below, but no man not actively engaged on his station in the engineer department during one of the full power trials will be entitled to prize money. Shares are assigned to men of different rating, as follows :—

"Chief petty officers, 15 dollars; petty officers, 1st class, 10 dollars; petty officers, 2nd or 3rd class, 8 dollars; firemen, 1st class, 7 dollars; firemen, 2nd class, 6 dollars, and coal passers, 5 dollars. These prizes are to be paid in the same manner as gunnery prizes and are to be exempted from checkage by sentence of a summary court-martial. The rules and instructions governing the competitions will be issued by the Department from time to time, and will be considered confidential."—*United States Naval Institute Proceedings.*

World's Largest Dry Dock.—Contracts for what is destined to be the largest dry dock in the world were awarded by the Navy Department on 15th June, when Secretary Meyer accepted the bid of the San Francisco Bridge Company, for the construction of the dry dock at Pearl Harbour, Hawaii. The masonry and cement part of the big structure is to cost 1,760,000 dollars, and the finishing work necessary to complete it will run the cost even higher.

When it is ready for the reception of vessels, the dock will accommodate the largest of the battleships and have room to spare. It will be able to take in a complete flotilla of torpedo-craft, or two cruisers at the same time. The dock is 620 feet long and 140 feet wide outside the coping, and it will be equipped with the most modern appliances for repairing the vessels of the navy.

Plans for an elaborate system of defences for the harbour have been drawn, and work is to proceed at once, keeping pace with the construction of the dock.—*Nautical Gazette.*

School of Marine Engineering.—G. O. 27, 9th June, 1909, Navy Department.

1. The Department hereby establishes a school of marine engineering at the Naval Academy, Annapolis, Md.

2. The Superintendent of the Naval Academy will be the military head of the school while it is in session at Annapolis.

3. He will establish regulations, subject to the approval of the Department, that will secure ample use of the educational plant of the Naval Academy to students and instructors of the school without interfering with the instruction of midshipmen.

4. The Chief of the Bureau of Steam Engineering will issue such orders as will secure the use of the engineering experiment station at Annapolis by the school.

5. The course of instruction in the school will not exceed two years.

6. The Bureau of Steam Engineering will prepare and submit to the Bureau of Navigation, for the approval of the Department, a curriculum for the school. This will include, in part, the study of design of marine machinery at the Bureau of Steam Engineering; the study of shop practices and management at such private engineering establishments as may be willing to allow the facilities of their plant for this purpose, and of experimental engineering and testing machinery and other mechanical appliances.

7. Instructors while at the school will be directly subject to the authority of the Superintendent of the Naval Academy, but they will not be connected with its academic work.

8. Ten line officers will be detailed annually to the course of instruction at the school.

9. Selection for this detail will be made by the Department from officers who are recommended for this duty and who request it. They must have performed not less than three years' service at sea, and except those selected for the first class must be below the grade of lieutenant commander. They will be selected on their records and reports of fitness, including letters from their commanding officers and from the engineer officers under whom they have served.

10. After completion of the course at the school of engineering, the student officers will, if practicable, be ordered to engineering duty on shore for a short time and then to engineering duty with the fleet.

11. Applications for permanent duty as designing engineers will be considered by the Department from graduates of the school and from other officers especially well qualified, but applications from graduates will not be considered until after two years from the date of their graduation. The

selection of such applicants for duty as designing engineers will depend upon their records and recommendations.

12. Normally, officers will be selected for permanent engineering duty at the rate of about two per annum, but this number may be subject to variation from year to year according to the desirability of the candidates.

13. No one will be selected except at his own request. Not more than twenty officers in the navy shall be at one time borne on the list for this special duty, and those selected after 1912 shall have taken a course of instruction at the school of marine engineering.

14. Officers selected as designing engineers will be given facilities for perfecting themselves as such, and will be detailed at all times for engineering duties.

15. Special examinations for promotion will be given those officers who specialise as designing engineers, as their fitness for promotion will depend upon their engineering knowledge. These officers will be promoted in regular order, retaining their present precedence.

16. Of the graduates of the school of marine engineering those selected for permanent duty as designing engineers will not be detailed to command at sea. All other graduates of this school will be available for detail to any duty.

17. Applications from officers eligible under this order for detail as students in the school of marine engineering are invited. Commanding officers will accompany each application with a specific recommendation as to the desirability of the applicant for this special duty and will immediately forward all applications direct to the Department through the Bureau of Navigation. When such applications cannot be received by mail at the Department before 15th August, 1909, commanding officers are directed to transmit by cable the names of the applicants for this duty whose applications have received their favourable endorsement. It is desired that all applications for this duty be received before 15th August, 1909, in order that the school shall begin its first term in October, 1909.

18. Officers below the grade of commander having had engineering experience desiring permanent assignment under paragraph 11 as designing engineers will immediately forward their applications to the Navy Department.

19. Officers who, under previous instructions of the Department, have signified their desire to take a course of instruction in marine engine design with a view to specialising in that branch, will renew their application should they desire to avail themselves of the opportunity offered by this order, as the system hereby established replaces that previously contemplated.—G. v. L. Meyer, Secretary of the Navy.

MILITARY NOTES.

Home. The following are the principal appointments which have been made :—

Major-General C. T. E. Metcalfe, C.B., to Command 6th Division, Cork (Irish Command).

Colonels—L. E. Kiggell, C.B., to be Director of Staff Duties at Headquarters, with temporary rank as Brigadier-General; E. J. Phipps-Hornby, V.C., to Command Royal Artillery, 4th Division (Eastern Command) with temporary rank as Brigadier-General; T. D'O. Snow, C.B., to Command 11th Brigade, Colchester (Eastern Command) with temporary rank as Brigadier-General; C. R. R. McGrigor, C.B., to be Brigadier-General in Charge of Administration (Western Command); W. E. Fairholme, C.M.G., M.V.O., to be Military Attaché (Paris-Madrid-Lisbon); W. C. Savile, D.S.O., to be an Assistant Director at Headquarters; A. D. B. Buckley to be as Assistant Adjutant-General at Headquarters; F. C. A. Gilpin to be Assistant Quartermaster-General (Southern Command.)

Indian Army.—Colonel G. A. Cookson to Command Cavalry Brigade, Bangalore (Southern Army).

Presentation of Colours to Territorials by the King.—On Monday, 25th ult., on Mousehold Heath, Norwich, His Majesty presented a Guidon to the Royal Regiment of Norfolk Yeomanry, of which he is Colonel-in-Chief, and Colours to the 4th and 5th Battalions of the Norfolk Regiment.

On the Cavalry drill-ground on Mousehold Heath were mustered 3,300 of all arms, the Norfolk units of the Norfolk and Suffolk Brigade of the Territorial Force, with Brigadier-General J. H. Campbell, commanding the East Anglian Division of the Territorial Force, in command. In the first line were the Norfolk Yeomanry, 400 strong; the 1st East Anglian Brigade Royal Field Artillery, 422 strong, with 12 guns; 4th Battalion Norfolk Regiment, 840 strong; 5th Battalion Norfolk Regiment, 838 strong; and 6th Battalion Norfolk Regiment (Cyclists), 500 strong. The second line was composed of the Norfolk and Suffolk Brigade Company Army Service Corps, 88 strong; and the 2nd East Anglian Field Ambulance, 249 strong. In the third line were 30 civilian motor-cars registered for use on mobilisation. The troops made a splendid show in the bright sunshine, and the manner in which they acquitted themselves on parade, especially the Artillery, evoked unstinted praise from those qualified to pronounce an opinion. The Royal pavilion was erected near the saluting base. On His Majesty's arrival he was received with a Royal Salute, and drove down the line to inspect the troops. He then returned to the pavilion for the ceremony of consecrating the Guidon which was to be presented to the Yeomanry and the Colours for the 4th and 5th Infantry Battalions. The Guidon and Colours were placed on piled drums in front of the pavilion, and facing them stood His Majesty, with the Earl of Leicester, the Earl of Albemarle, Mr. Haldane, and His Majesty's Equerries The Colours were then consecrated by Bishop Taylor Smith, Chaplain-General to the Forces, the Benediction being pronounced by the Bishop of Thetford. His Majesty then presented the Guidon and Colours to the colour parties, who returned to their units, halting twenty yards in front while the troops saluted the Colours. Next came the march-past. First came the Yeomanry in column of troop, their band playing the "Coburger March," then the Artillery in quarter column of batteries, the ammunition column bringing up the rear. The Earl of Stradbroke, their honorary colonel, rode at the head of the Artillery. The 4th and 5th Battalions of the Norfolk Regiment went by in quarter column, the Earl of Leicester riding at the head of the 4th Battalion, of which he is honorary colonel. The 6th Battalion, composed of khaki-clad cyclists, followed, and afterwards the Army Service Corps Company (without wagons) and the Field Ambulance. Succeeding these came an un-uniformed but quite as interesting a muster—400 members of the Royal Norfolk Veterans' Association, marching four deep, nearly every man of them wearing an active service medal. They were headed by their band, and marched to the appropriate tune of "The Old Brigade." The Norfolk ex-Volunteers in possession of the Long Service Medal followed. After the march past, the whole of the troops on parade advanced in review order, the massed bands playing "Rule, Britannia," and finally the National Anthem, as His Majesty left the review ground. Before the King left the pavilion, the members of the Norfolk Territorial Force Association were presented to him, including the Right Hon. A. E. Fellowes, the chairman.

Promotion in the Army.—Amongst the Parliamentary papers issued recently was the following return (275), showing the average time taken from the date of first commission in attaining respectively the ranks of captains and of majors of officers in the Cavalry, Royal Artillery, Royal Engineers, Infantry, and Indian Army :—

—	Captain.		Major.	
	Years.	Months.	Years.	Months.
1905 - Cavalry	6	7	14	—
Artillery, Field	7	6	16	—
„ Garrison ...	7	—	19	—
Engineers	9	—	18	6
Infantry	6	9	18	1
Indian Army	9	—	18	—
1908—Cavalry	7	5	14	10
Artillery, Field.	8	6	17	6
„ Garrison ...	8	—	20	—
Engineers	9	—	19	7
Infantry	8	4	18	3
Indian Army	9	—	18	—

Disbandment of Units.—The Army Orders for October announce that the King has approved of the disbandment of the following units of Royal Field Reserve Artillery, on a date to be given hereafter: The South-East of Scotland, the Cornwall and Devon Miners, the Devon, the Donegal (the Prince of Wales's), the Dublin City, the Durham, the Duke of Edinburgh's Own Edinburgh, the Fife, the Forfar and Kincardine, the Glamorgan, the Duke of Connaught's Own Hampshire and Isle of Wight, the Kent, the 1st Lancashire, the 2nd Lancashire, the Limerick City, the Mid-Ulster,

Home.

the Prince of Wales's Own Norfolk, the Northumberland, the Carmarthen, the Suffolk, the Sussex, the Tipperary, the Waterford, the West of Scotland, the Pembroke, the Yorkshire (Duke of York's Own), the Cardigan, the Wicklow, the Duke of Connaught's Own Sligo, the Londonderry, and the Clare.

Flies as Carriers of Infection.—In the Reports to the Local Government Board on Public Health and Medical Subjects (New Series, No. 16), the following conclusions drawn from investigations with regard to flies as carriers of infection are given, and as the subject is an important one from an Army point of view, we reproduce the paragraphs in question (page 30) :—

"Although a perusal of the preceding pages will show that there were some who at a very early date looked upon the common house-fly with suspicion, it is only of recent years that 'flies' have come to be regarded as a serious factor in the spread of infective diseases.

"The evidence we have sifted and ordered in these pages is obviously very unequal in value, the most important relating to *cholera and typhoid fever* — in both cases the evidence incriminating house-flies, of which *Musca domestica* may be regarded as the type, appears to be quite conclusive, and these agents will have to henceforth receive the serious attention they demand at the hands of sanitary authorities. From a practical point of view it scarcely appears necessary to charge the house-fly with more misdoings, bacteriological tests having shown that they are capable of taking up a number of different pathogenic germs and of transporting them from one place to another. We regard it as certain that they convey cholera and typhoid fever, and we look forward with confidence to the complete demonstration that they convey the causative agents of infantile diarrhœa and of dysentery, always remembering that there are other vehicles, water, milk, etc., by which these diseases may be communicated.

"It should be remembered that a fly may cause *relatively gross infection* of any food upon which it alights after having fed upon infective substances, be they typhoid, cholera, or diarrhœa stools. Not only is its exterior contaminated, but its intestine is charged with infective material in concentrated form which may be discharged undigested upon fresh food which it seeks. Consequently, the excrement voided by a single fly may contain a greater quantity of the infective agents than, for instance, a sample of infected water. In potential possibilities the droppings of one fly may, in certain circumstances, weigh in the balance as against buckets of water or of milk!"

Austria-Hungary.

What a War would Cost in the event of its being Necessary to Mobilise the whole Austro-Hungarian Army.—In the last number we gave a *résumé* of an article which had appeared in *Danzer's Armee Zeitung*, giving the probable cost of a war limited to Austria-Hungary on the one side and Servia and Montenegro on the other. The same author, in a second article, gives an outline of the expenses that would have to be incurred in the case of a general mobilisation. The following are the results at which he arrives :—

Austria-Hungary.

A general mobilisation would become necessary if, instead of having only Servia and Montenegro to deal with, Austria had at the same time to face war with Russia, and eventually with Italy.

Such a situation would require not only the mobilisation of the Common Army and the two *Landwehrs,* but also that of the greater part of the *Ersatz-Reserve* and of the *Landsturm.*

We should have, consequently, to provide for :—

1. The field army, that is to say the placing on a footing for taking the field of the army and the two *Landwehrs* (12 classes)—in round numbers, a million men.
2. The march formations of the field army, formed principally of reservists, and comprising new units for the *Etappen* service—that is, 150,000 to 200,000 men.
3. The units necessary for completing to a war footing of the army and the two *Landwehrs,* comprising the men of the *Ersatz-Reserve* and the non-trained recruits—400,000 to 500,000 men.

Those three contingents of the field army, for which everything is prepared in time of peace, number at least 1,600,000 men.

In addition, every preparation is made in peace time for the mobilisation of the new units of the *Landsturm,* the effective strength of which is kept secret. We may assume that during the course of the campaign new units would be organised with the disposable men of the *Landsturm* and *Ersatz-Reserve.* The whole of these last units may be calculated at a strength of half the army of the first line—that is, 800,000 men. The total number of men under arms at the moment when the strain would be greatest would then be 2,400,000 men, now that the number of disposable men is 3,700,000.

We will calculate the war expenses for an effective strength of 2,000,000, allowing for the maintenance by the ordinary Budget, as in time of peace, of 400,000 men. If we assume, as we have done before, the sum of 12·5 crowns (10s. 5d.) as the mean cost per man per day (including the allowances to the families of the men recalled to the colours), the expense per day for the effective strength of 2,000,000 men is 25 million crowns (£1,041,666).

One cannot base one's estimates as to the probable duration of the war from the Russo-Japanese war. In a European war the general mobilisation will allow of an immediate full deployment of the forces, which the Japanese only attained after the war had lasted a year. In supposing that it lasts six months, we shall probably approximate the mark; the excess of expenses resulting from the war for that length of time would be four and a half million crowns. These expenses would not be divided equally over the whole period; at the outset there are stores of all kinds to be provided or stocks to be made good, and it will be necessary to provide 1,200 million crowns (£50,000,000) for the first six weeks of the mobilisation. It will further be necessary to provide considerable sums in order to make good the depletions from the depôts, to allow for the payment of the non-commissioned officers and men, and to avoid an industrial crisis. One can estimate the amount of money so required at 650 million crowns (£27,083,333); that is, for the first six weeks—a total sum of 1,850 million crowns (£77,083,333).

Austria-Hungary.

In order to meet these expenses, it will be necessary at first to rely on the Austro-Hungarian Bank. Supposing that at the moment of mobilisation the Bank had a gold reserve of 1,550 million crowns (£64,583,333), it could issue notes to the amount of 3,880 million crowns (£161,166,666)—two and a half times the amount of the gold reserve. As the actual amount of the note issue at present does not much exceed 1,800 millions (£75,000,000), there could be an issue, in case of mobilisation, of 2 milliards (£83,333,333) of notes, which would be sufficient to cover the expenses of the first six weeks.

In order to meet the subsequent expenses, there will be two measures possible : either impose war taxes or contract war loans. In the first case, if the war only lasts a short time, the amount obtained from the new taxation would be but small. In order not to unsettle the country, it would be better either not to impose them at all, or to be content with only a small increase of the existing taxation. The loans should be contracted in the form of short-term loans, after the method adopted by the Russians during the late war.

If the war was localised between Austria and Italy, or Germany, Austria and Russia, these loans could be placed in a great part abroad, and that without much difficulty.

But it is difficult to foresee what would happen if France and England became involved. One critical side of the launching of these loans is that they would have to be guaranteed by all parts of the Monarchy, and the credit of the different members is not the same, as we have seen when the last issue of Treasury Bonds took place. Whilst the 150 million crowns (£6,250,000) of the Hungarian four and a half per cent. loan was only subscribed four times over, the Austrian loan, bearing only 4 per cent. interest, was covered twelve times over. It is therefore perfectly evident how the preparation for war of the Monarchy might be endangered if the proposed separation of the Bank between the two countries was carried out.

Finally, it is interesting to examine how far the Monarchy, in case of a successful war, could recoup itself for its expenses. This recoupment could be obtained either by an annexation of territory or by a war indemnity.

As far as the Balkan States are concerned, it would only be a question of the annexation of the two countries.

In a war with Italy, the annexing of a province can hardly be considered as practical; we could only look forward to some rectification of the frontiers and the occupation of certain important points on the east coast, such as Venice or Ancona, in order to put an end to Italy's aspirations on the Adriatic coast. On the other hand, owing to its great resources and the sound state of its finances, Italy could easily pay a war indemnity.

The case would not be the same as regards Russia. There would be the temptation to annex territory, Russian Poland, the Podolia, and Volhynia, which only belong against their will to Russia, and whose inhabitants do not understand the Russians. Still the annexing of these countries to the Austro-Hungarian Monarchy does not appear desirable.

Further, we could not count upon a war indemnity. A war would mean for Russia ruin; an unsuccessful war, complete Anarchy. It would be necessary to find some way by which an insolvent debtor could pay his debts.

Austria-Hungary.

Russia possesses in her immense territory considerable sources of natural wealth; but Russia cannot, without foreign aid, develop these resources, and it would therefore be necessary for us to insist on the appointment of trustees, whose duty it would be to find the necessary funds, and superintend the work of developing these natural riches.—*Revue Militaire Générale.*

France.

The New Generalissimo of the French Armies. — By a Presidential Decree of the 31st of August, General Trémeau, who was already a Member of the Superior Council of War, has been named Vice-President of the Council in succession to General Lacroix, who retires on reaching the age limit. This appointment, although wearing the appearance of being an honorary one, and which in time of peace carries with it scarcely any special privileges beyond that of Director of the Army Manœuvres, entails, however, on mobilisation the Command-in-Chief of the whole forces grouped on the North-east Frontier, making the holder of it, to all intents and purposes, Generalissimo of the French Armies. And it is, as a matter of fact, under this designation that he is known to the public, which cares little for official distinctions and subtleties.

The choice of the Government has met with universal approval; but nowhere has it been received with so much pleasure as by the cavalry, which now sees with pride for the first time since the reorganisation of the Army the most distinguished of its old chiefs appointed to the supreme command in the Army.

It is with the cavalry that the new Generalissimo, except for intermittent periods of Staff service, has passed his career. Born on the 8th September, 1849, his age will allow of his holding his new appointment for five full years. He joined St. Cyr in October, 1869, receiving his commission as Sub-Lieutenant in the 5th Dragoons on the 14th August, 1870, with which regiment he served during the war, taking part in the defence of Paris. He was promoted to Captain in October, 1875, and the following year joined the Superior Military School (now the Superior School of War), and in 1879 was appointed to the General Staff. During the next few years he served as Aide-de-camp to General Campenon during the three periods when that officer was Minister of War. In 1883 he was promoted to Chef d'escadron (Major), and in December, 1890, to Lieut.-Colonel, having in the interval served as Professor of Military Art and Sub-Director of Studies at the Saumur Cavalry School, and then as Chief of the Staff of the 2nd Cavalry Division. In 1893, having served as Sub-Chief of the Military Cabinet of General Loizillon, then Minister of War, he was promoted to Colonel and the command of the 4th Chasseurs, which appointment he held until he was made General of Brigade in July, 1899.

After having commanded in succession the Cavalry Brigade of the Ist Army Corps and the 6th Infantry Brigade, he was promoted to General of Division in July, 1902, and appointed to command the 3rd Cavalry Division, and in October, 1904, to the command of the XIIth Army Corps, and then of the VIth, at the same time being appointed President of the Cavalry Technical Committee. In July, 1907, he was appointed a Member of the Superior Council of War, in 1908 commanding with great distinction one of the armies at the Grand Manœuvres of the

France.

centre, while this year, after his nomination as Vice-President of the Council of War he exercised the supreme direction of the Grand Manœuvres.

He is without question the *right man in the right place*, and enjoys the complete confidence of both Government and the whole Army.—*Revue de Cavalerie.*

Programme for the Reorganisation of the Artillery.—A Ministerial Instruction of the 26th August last regulates as follows the reorganisation of this arm of the Service, of which details have already been given :—

On the 1st October, 1909 :

94 field batteries, armed with the 7·5-cm. Q.F. gun (14·5-pounder), are to be created, and 36 horse artillery batteries are to be transformed into field.

On the 1st March, 1910:

Ten field artillery regimental staffs, 2 mountain artillery regimental staffs, and 11 foot artillery regimental staffs are to be created; 7 staffs for artillery groups, 5 field and 2 foot, and for 4 field batteries in Africa.

On the 1st July, 1910:

The replacing of the 10 Artisan Companies and 3 of Mechanics, at present existing by 4 Artisan Companies attached to the fortresses of Belfort, Epinal, Toul and Verdun, and 86 sections of the types A, B, C, and D.

On the 1st October, 1910 :

Creation of 65 field batteries, armed with the 7·5-cm. gun, and of 3 batteries of 6-inch howitzers.

On the 1st March, 1911 :

Creation of 12 field artillery regimental staffs and completion of reorganisation.

The existing 18 6-inch field howitzer batteries will be stationed in groups of 3 at Donai (15th Regiment), Orléans (32nd), Le Mans (31st), Poitiers (20th), Vincennes (13th), Valence (6th).—*Bulletin de la Presse et de la Bibliographie Militaires.*

Germany.

Creation of a New Cavalry Brigade.—In accordance with the last Quinquennial Law and the Finance Law of 1909, the organisation of a sixth cavalry brigade was commenced on the 1st of October, in the Bavarian Army, which will be attached to the 6th Infantry Division (IIIrd Bavarian Army Corps), the only one up to the present not provided with cavalry.

This new formation will necessitate the creation of a brigade staff and of a new regiment of *Chevau-légers*, which will take the No. 8. This regiment, composed of four squadrons, will be stationed at Dillingen, on the Danube; but this regiment will not form part of the new brigade : it will replace in the 2nd Cavalry Brigade (Augsburg) the 2nd *Chevau-légers*, who will pass to the 6th, and will consequently be transferred from Dillingen to Ratisbon, where also the headquarters of this last brigade will be established, adjacent to that of the infantry division and of the Army

Corps to which it is attached. The second regiment of the new brigade will be the 7th *Chevau-légers,* which will remain stationed at Straubing. The 8th regiment of *Chevau-légers* will be constituted by means of the 2nd squadron of the 2nd regiment, of the 5th squadron of the 4th, of the 2nd squadron of the 5th, and of a newly created squadron. After the creation of these new units, the six infantry divisions of the Bavarian Army will each have their cavalry brigade of two regiments, each with four to five squadrons.

The Horsing of Bridging Matériel.—According to the *Kavalleristische Monatshefte,* in future the vehicles conveying the bridging *matériel* of the German cavalry will be drawn by 6 horses instead of only by 4; the intention being to notably increase the mobility of a *matériel,* specially called upon to follow the mounted regiments.

Each regiment of cavalry disposes of two of these wagons, each carrying a half-pontoon-boat of steel and the necessary fittings; these two half-boats can be rapidly put together to form the complete pontoon-boat. With this *matériel* the regiment can construct a foot-bridge 32 metres (105 feet) long or a light bridge 8 metres (26 feet) long, and 9 feet 9 inches wide, or one 12 metres (39 feet) long and 6 feet 6 inches wide; the foot bridge can only be used by men on foot, the light bridges being for the horses.

A cavalry division of 6 regiments can construct a foot-bridge 190 metres (625 feet) long, or a light bridge of 50 metres (164 feet). A regimental equipment also allows of the construction of a raft or flying bridge of 16 square metres (172 square feet) of surface, which can carry either a wagon (gun, machine-gun carriage or caisson) or 4 horses with their drivers, or 30 men, or 50 saddles loaded with the arms of the riders.

When the *matériel* is used for the construction of a foot-bridge, the horses cross over by swimming alongside it, held by means of the bridoon, which is attached to the lance sling.—*Revue de Cavalerie.*

Promotion of Officers.—An examination of the recently published seniority list seems to show that, if in the course of the year 1908 the conditions of promotion have slightly improved in a small number of grades, on the whole promotion, particularly in the lower ranks, has become slower.

No Lieut.-Generals were promoted to the rank of General of Infantry, Cavalry, or Artillery; the senior among them, General Emmich, who last year headed the list, was promoted in 1905, having received his commission as officer in 1868; he has, however, been promoted to General of Infantry this year, and at present commands the Xth Army Corps. For the rank of Major-General the conditions of promotion have undergone no modification, the senior Major-General having held that rank for three years.

Among the Colonels the senior have four years' standing, but their position is not the same in all branches of the service, for while in the infantry one only holds an *interim* command as Brigadier, twenty-one cavalry and as many artillery Colonels command brigades.

Lieut.-Colonels are worse off by a month, the senior among them having three years' standing; but here again while no Lieut.-Colonel of Infantry commands a regiment, all the Lieut.-Colonels of Cavalry, except

Germany.

two, 44 Lieut.-Colonels of Field Artillery, and all those of the Foot Artillery command regiments. This difference in the employment held by officers of the same rank, though belonging to different branches of the service, is due to the fact that starting from the rank of Major, officers selected for promotion are drawn from the whole army, while employment is dependent upon regimental vacancies.

The promotion of Majors has been normal, the maximum time passed in that rank being six years and a-half.

Starting from the rank of Captain, the conditions of promotion in the different branches show some disproportion, which is somewhat modified by delaying the patents of officers who belong to the more favoured arms. As regards promotion to the rank of Captain, it is slower by four months in the infantry and field artillery, seven months in the foot artillery, nine months in the train, and twelve months in the communication troops, but is more rapid by a month in the Pioneers and three months in the cavalry. The time passed in this rank varies between eleven years and a-half in the infantry, and rather more than ten in the foot artillery. It must be noted, however, that by a system of antedating the patents of officers, who it is wished to push on, this time is often lowered to six years and a-half.

For the ranks of First and Second-Lieutenants, the position has become frankly worse, except in the cavalry. The time passed in these two grades is now almost sixteen and a-half years for the infantry. This unsatisfactory state of things is causing serious concern, and among other remedies it is suggested that the number of Lieutenants should be decreased and that their place should be taken by Warrant Officers (*Feldwebelleutnants*) selected from among the non-commissioned officers.—*Revue Militaire des Armées Etrangères.*

Russia.

Lessons from the Past (Extract from the *Novoe Vremya*).—Translated from the Russian by A.P.B.

Until the Russo-Japanese War, neither our own nor any other European Army has ever experienced a battle which has lasted uninterruptedly for the whole of two or three weeks, for, up till now, no engagement has exceeded a few hours, or at most, a few days.

These protracted battles, the exclusive speciality of the past war, appear to be the inevitable consequence of Japanese tactics, and if one may judge from the character of their present preparations, the Japanese intend in the future to act in precisely the same manner, carrying the fundamental principles of their tactics up to the extreme limit of their development. Thus they are acting on the basis of the experience gained in the war with us. This experience gave them two chief and exceedingly important lessons.

The first may be summed up as follows :—

Although the modern rifle, with its long range affords the possibility of shooting up to four or five thousand paces, it is nevertheless this very property of the arm which renders it not only useless but even dangerous (that is, when used in the defensive in the initial stages of a battle).

Shooting at such long ranges the infantry can, no doubt, inflict by their fire considerable damage; but, at the same time, they expose themselves to the activity of the enemy's artillery and thereby suffer a greater loss themselves. Consequently a battle, until some decisive moment, must be carried on exclusively by artillery fire, and the infantry must meanwhile hide themselves as best they can in the trenches, so as to lose as few men as possible. This decisive moment occurs only when the enemy, who have assumed the offensive, advance their attacking units up to 1,000 paces from the infantry trenches.

The second lesson of experience points out that if the defending infantry up to this moment preserve their full strength and vigour, and a plentiful supply of ammunition, and open fire in small groups (*i.e.*, controlled), they will not permit the enemy to advance even so much as 200 paces, and every effort against the defence will seem futile.

The Japanese regard this maxim as absolutely reliable, and it was so in the case of our troops, who advanced without flinching so long as they had a leg to stand on, till there remained a mere handful, 10-15 men per company. It is generally supposed that the loss of one-third of the *personnel* is quite sufficient to stagger the attack—this is the usual limit of endurance of European troops.

Our attacks on the Japanese positions succeeded only on those occasions when the Japanese infantry opened fire too soon and, consequently, when the decisive moment arrived they had already suffered considerable loss, and there was also a shortage of ammunition.

The Japanese decided that such mistakes should never recur. And profiting by the experience of the war, they have, during the last two years, been training their troops on the following lines :—

As soon as the troops occupy the positions allotted to them, the infantry immediately begin to dig trenches and, in the literal sense of the word, burrow into the earth. Above ground remain only the guns and machine guns, and the whole—both the infantry trenches and the gun epaulements—are covered from the view of the enemy by a skilful adaptation to the surroundings and a masterly method of concealment, of which only the Japanese—special adepts in the art—are capable.

They also construct beforehand plotting boards of the immediate vicinity, showing the positions of the enemy, the distances to them and to all well-defined objects. The field range-finders, with which all Japanese units are supplied, are of great assistance in this.

Their scouts make their way to the rear of the enemy's positions, and give the signal (even flashing small mirrors in the sun), while the range-finders take the ranges of these bright objects from the batteries.

In this manner, knowing the exact direction and the range of the most important points of the enemy's dispositions, the Japanese can fire on them with the same precision by night as by day.

This method of firing at extreme ranges is taken from " Siege Artillery Guns Adapted for Field Work."

The new park of such artillery consists of 500 guns. No system of cover trenches possible in the field can withstand the high explosive charge of these guns. For high elevation and concentration of fire this park is provided with mortars and howitzers.

In addition to the siege pieces they have 105 millimetre guns—also recently introduced by them—with a range of 10 versts (11,660 yards), firing shrapnel and shumôse shells weighing 40 funt (36 lbs.).

Russia.

At 3-4 versts (3,498-4,664 yards) nearer, the large number (at the present time 1,788 guns) of Japanese field artillery guns begin to thunder on the enemy.

If in the past war the fire of their artillery produced a terrible impression by the strength and intensity of their fire, it is now almost impossible to form a correct estimation of its effect. Take, for instance, any hostile unit advancing to attack the Japanese trenches. What awful carnage will result in the area swept by the fire of these three types of guns.

Now the explosion of every 40 funt (36 lbs.) to say nothing of the heavier siege shells, is equal to the explosion of a fougasse.

To this diabolical thundering must be added the crackling of numerous machine guns with a range of 3,000 paces (besides the machine gun batteries the Japanese provide a regimental machine gun one per battalion), and when at last torn to pieces, shaken and disordered, the attacker rushes on to 1,000 paces, the line of trenches hitherto unnoticed bristles with glistening bayonets, and the infantry behind them meet him with a rifle fire of almost unerring accuracy. If the attacking enemy does not change his tactics, he will be annihilated before he reaches 800 paces.

The Japanese are quite confident of this result, and in order to obtain under these conditions the most accurate rifle fire possible, they are not deterred by the expense of remodelling all their rifles (Azuzaka pattern) with the object of obtaining a flatter trajectory.

In accordance with this principle they will in future construct at such places in the theatre of war as they consider necessary to themselves, strong fortifications, against which frontal attacks in the open will be quite impossible for any troops. One must not forget that in the past war this system of defence met with brilliant success, although they did not then have at their disposal all the means of destruction with which they are now provided; consequently, armed with all these new appliances, their predictions for the future, based on careful observation, appear more than justified.

But while they exercise their troops in the defence, the Japanese also train them in the attack, in which they fully realise that their enemy will defend himself as strongly as they themselves. Therefore they completely exclude from their tactics any open attacks as impossible, and propose to settle all problems of the offensive by the help of flanking movements by night, and sudden night attacks. Here, precisely as in the defence, their chief care is to preserve the vigour of their strength until the moment of the decisive blow.

In the past war they were thoroughly convinced, by our mistakes, of the truth of Napoleon's words:—

"It is essential to preserve the infantry, for if needlessly exposed for long to the enemy's artillery fire, they will become demoralised and eventually defeated."

This is the fate which the Japanese are preparing for their future enemies, and from which they shield their own troops by every possible means. In order to ensure the success of their night flanking movements and attacks, they propose to employ scouts and spies on a large scale, providing them with all the improvements of complete technique in the form of wireless telegraphy, telephones, signalling apparatus, carrier pigeons, etc.

Russia.

This department, during the last 18 months, has been reorganised and brought to a high state of perfection; but the chief hope of the Japanese in this respect lies in their special corps of scouts and spies.

In the scouting service, apart from this special corps, there are two divisions distributed over Korea who are trained on the same lines, so that the staff of trained men in case of war will be enormous. According to the reports of European witnesses, the troops of the Korean divisions, all of them officers and men alike, by their skill at finding their bearings in whatever locality you please, on the very darkest night, can only be compared with night beasts of prey. Such swift-working scouts will be able to lead the Japanese columns in their night undertakings, and as regards their scouts, sufficient is already known from the experiences of the past year.

It is to some purpose that in the regulations relating to the Japanese military order of the Falcon we find only five occasions on which it is awarded, and three of them are: "The accomplishment of an order in rear of the enemy."

Above this comes "saving the life of a superior officer at great personal risk," and below: "The assassination of the enemy's commander."

It would be possible to bring forward still more data and details of the Japanese preparations for war—the subject is almost inexhaustible; but I consider that I have already said sufficient to cause some anxiety and uneasiness, and meanwhile what are we ourselves doing in this respect?

We have but to remember that the Japanese defeated us when they had in their first line only 160,000 men and 576 field guns, and now they can place in their first line 800,000 troops and 2,384 guns, including field, heavy, and siege.

On reading the foregoing data, the true significance must strike many that in order to complete all these technicalities of war, it follows that the Japanese must possess special qualities.

Such is, indeed, the case, and it is necessary for us, in order to completely and correctly estimate the strength of the Japanese army, to refer, although in the briefest manner, to this aspect of the question.

Turkey.

The following high appointments have been made:—

Vice-Admiral Aarif Hikmet Pasha, who was Minister of Marine in the Government of Kiamil Pasha from July, 1908, to February, 1909, has been again placed at the head of this Department.

The Ministry of War has been entrusted to General of Division Salih Pasha, Commander of the IInd Army Corps. The new Minister of War was a pupil at the Staff College, from whence he went to study in Germany, where he remained four years, returning to Constantinople as a Professor in the Staff College. For three years he served as a Military Attaché, and on his return to Constantinople he was appointed Assistant to Marshal von der Golz, and was employed under his orders in the work of the reorganisation of the Turkish Army. Becoming a suspect under the old *régime*, owing to his marriage with the daughter of Marshal Fuad Pasha, he was exiled to Diarbékir, then to Siwas, where he remained nearly seven years. The revolution of July last year allowed of his return to Constantinople, when he was appointed as Second-in-Command at the General Staff, being nominated last April to the command of the IInd

Army Corps at Adrianople, where he succeeded Nazim Pasha. Salih Pasha enjoys a high reputation in the Army for capacity, knowledge, and energy.

Marshal Abdullah Pasha, late head of Abdul Hamid's military household and late commander of the IVth Army Corps at Erzindjan, has been appointed commander of the IInd Army Corps in succession to Salih Pasha.

An Imperial Iradé has just been issued creating the post of Inspector-General of the Ist, IInd, and IIIrd Army Corps (Constantinople, Adrianople, and Salonika). General Mahmouhd Chefket Pasha, late commander of the IIIrd Army Corps at Salonika, has received the appointment.

Supplementary Credits for the Army and Navy.—The Treasury is about to receive some considerable sums not provided for in the Ordinary Budget for the Empire for 1325 (1909). These are :—

	Turkish.	*English.*
1. The indemnity from Austria-Hungary for the Annexation of Bosnia	£2,500,000	£2,250,000
2. The money and bonds discovered at Yildiz Kiosque	1,600,000	1,440,000
3. The proceeds from the sale of old cannons	300,000	270,000
4. The proceeds from the sale of property belonging to the Civil List	925,000	832,500
Total	5,325,000	4,792,500

There has been some question as to how to dispose of these new resources; but the Council of Ministers has now decided to allot the largest part as Supplementary Credits towards the expenses of the Army and Navy, as follows :—

£(Turkish)3,286,463 (£2,957,817) to the Army.

£(Turkish)341,746 (£307,572) to the Grand Master of the Artillery.

£(Turkish)63,911 (£57,520) to the Navy.

The balance, £(Turkish)1,625,000 (£1,462,500), is to serve to reimburse advances granted to the Government by different financial houses.

A Bill to this effect has been drawn up by the Reporter of the Budget Committee, and has been unanimously adopted by the Chamber of Deputies.—*Revue Militaire des Armées Etrangères.*

CORRESPONDENCE.

The following letter from Colonel Sir E. T. Thackeray was received too late for publication in the September JOURNAL:—

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—The 14th of this month will be the 52nd Anniversary of the assault of the City and Fortress of Delhi, and the day on which Brigadier-General John Nicholson was mortally wounded.

On that day also a most brilliant deed of valour was performed by Lieutenants Duncan Home and Philip Salkeld, and a small party of non-commissioned officers and native Sappers.

Thinking that a reminiscence of this brave act might prove of interest to some of your readers, I have ventured to enclose copies of the official reports by the late Lieutenant Home and the late Colonel R. Baird Smith, the Chief Engineer of the Delhi Field Force.

Yours faithfully,

EDWARD T. THACKERAY,
Colonel, R.E. (Retired).

39, Cheyne Walk, Chelsea,
6th September, 1909.

Lieutenant Salkeld died from the effects of his wounds on the 11th October, 1857, and Lieutenant Home was killed by the accidental explosion of a mine at Fort Malagush, on the 1st October, 1857.

MEMORANDUM FOR LIEUTENANT D. C. HOME.

Lieutenant Home, with Lieutenant Salkeld and four non-commissioned officers, each carrying a 25 lb. bag of powder, will accompany the covering party of rifles that precedes the columns, and will proceed to blow in the Cashmere Gate. The party will be accompanied by a bugler of the 52nd Regiment, and on the explosion causing a successful demolition, Lieutenant Home will cause the bugler to sound the regimental call, which will be the signal for the column to advance and storm the gateway.

If the demolition is not complete, and the breach made quite passable, Lieutenant Home will at once send notice of the fact to Colonel Campbell, and will himself rejoin the column with his party, following the first column by the breach. If from any cause whatever no explosion should take place, intimation should at once be sent to the different divisions by Lieutenant Home.

(Signed.) R. BAIRD SMITH,
Lieut.-Colonel, Chief Engineer.

Dated Camp before Delhi,
14th September, 1857.

FROM LIEUTENANT D. C. HOME TO LIEUT.-COLONEL R. BAIRD SMITH, CHIEF ENGINEER.

SIR,—In accordance with your instructions, I have the honour to forward as detailed an account as possible of the proceedings of the party ordered to blow open the Cashmere Gate of the city of Delhi on the morning of the 14th inst.

Lieutenant Home (Engineers),
Lieutenant Salkeld (Engineers),
3 N.C.O. Sappers,
14 Native Sappers,
10 Punjab Pioneers.

2. The covering party of the 60th Regiment Royal Rifles having advanced in skirmishing order from No. 2 Battery (left) at Ludlow Castle, the explosion party (as per margin), provided with powder bags and ladders, proceeded to the front at the double, halting once under cover to enable stragglers to come up.

On advancing again Sergeants John Smith and Carmichael, and Madho Havildar, all of the Sappers, and myself, arrived at the Cashmere Gate, untouched, a short time in advance of the remainder of the party under Lieutenant Salkeld, having found the palisade gate on the outside of ditch and the wicket of the Cashmere Gate open, and three planks of the bridge across the ditch removed. As Sergeant Carmichael was laying his powder bag he was killed by a shot from the wicket. Havildar Madho was, I believe, also wounded about the same time.

3. Lieutenant Salkeld, carrying the slow match to light the charge, now came up with the remainder of the party, and with a view to enable him to shield himself as much as possible from the fire from the wicket, which was very severe (and the advanced party having deposited the powder bags), I slipped down into the ditch. Lieutenant Salkeld being wounded in the leg from the wicket, handed over the match to Corporal Burgess, of the Sappers, who was mortally wounded while completing the operation. Havildar Tillok was at the same time wounded while assisting Corporal Burgess into the ditch; Sepoy Rambeth was also killed at the same time.

As I was assisting Lieutenant Salkeld into the ditch, I think he was wounded a second time.

4. The charge having exploded, blew in the right (proper right) leaf of the gate, on which I caused the regimental call of the 52nd Regiment to be sounded as the signal for the advance of the storming party. As I was afraid that the bugle might not be heard, I caused the bugler to sound the call three times, after which the column advanced to the storm, and the gate was taken possession of by our troops.

5. I have now only to bring to your notice the gallant conduct of Lieutenant Salkeld, who was wounded while firing the charge; of Sergeant John Smith (Sappers and Miners), who arrived at the gate at the same time as myself; of Bugler Hawthorne, of the 52nd Regiment, who accompanied the party to give the signal for the advance, and who, under a heavy musketry fire, while Lieutenant Salkeld was lying wounded in the ditch, bound up his arm and leg with bandages, and exerted himself in every possible way to ease Lieutenant Salkeld; of Madho Havildar (Sappers and Miners), who arrived at the gate along with myself, and was wounded while placing the powder bags; of Tillok Havildar (Sappers and Miners), who was of Lieutenant Salkeld's party, and was wounded while assisting Corporal Burgess into the ditch; of Jahab Singh, Sepoy (Sappers and Miners), who was one of the party who came up with powder bags along

with Lieutenant Salkeld; of Tooloo Subadar (Sappers and Miners), who was of Lieutenant Salkeld's party, and who, under a very heavy musketry fire, exerted himself in relieving Lieutenant Salkeld's wounds. I regret exceedingly that Government has lost the services of Sergeant Carmichael and Corporal Burgess, who were killed before the fire from the wicket, two more gallant men than whom it is difficult to meet with.

6. I have now given as succinct and correct an account of our proceedings as the excitement and bustle of the moment would allow me to achieve, and I hope that the conduct of the whole detachment under my orders will meet with your approbation.

After the gate was blown in we ought to have advanced with the third assault column towards the Jumna Musjid, but we unluckily missed the column, and only joined it at the Bank Compound.

I have the honour to be, etc.,

(Signed.) D. C. HOME, *Lieutenant, Engineers.*

EXTRACT FROM THE REPORT OF LIEUTENANT-COLONEL BAIRD SMITH, CHIEF ENGINEER, DELHI FIELD FORCE, TO MAJOR-GENERAL WILSON.

DATED 17TH SEPTEMBER, 1857.

Para. 13.—The gallantry with which the explosion party under Lieutenants Home and Salkeld performed the desperate duty of blowing up the Cashmere Gate in broad daylight in face of the enemy, will, I feel sure, justify me in making mention of it. The party was composed, in addition to the two officers named, of the following :—Sergeant John Smith, Sergeant A. B. Carmichael, Corporal F. Burgess (Sappers and Miners), Bugler Hawthorne (H. M.'s 52nd Regiment), fourteen native Sappers and Miners, ten Punjab Sappers and Muzbis.

Covered by the fire of Her Majesty's 60th Rifles, the party advanced at the double towards the Cashmere Gate, Lieutenant Home and Sergeants Smith and Carmichael, and Havildar Madho (all of the Sappers), leading and carrying the powder bags, followed by Lieutenant Salkeld, Corporal Burgess, and a section of the remainder of the party. The advance party reached the gate unhurt, and found that part of the drawbridge had been destroyed; but passing across the precarious footing supplied by the remaining beams, they proceeded to lodge their powder against the gate.

The wicket was open, and through it the enemy kept up a heavy fire upon them. Sergeant Carmichael was killed while laying his powder, Havildar Madho being at the same time wounded. The powder being laid, the advance party slipped down into the ditch to allow the firing party under Lieutenant Salkeld to perform its duty.

While endeavouring to fire the charge Lieutenant Salkeld was shot through the leg and arm, and handed over the slow match to Corporal Burgess, who fell mortally wounded just after he had successfully accomplished the arduous duty. Havildar Tillok Singh, of the Sikhs, was wounded, and Rambeth, Sepoy, of the same corps, was killed during part of the operations. The demolition having been most successful, Lieutenant Home, happily unwounded, caused the bugler to sound the regimental call of the 52nd, as the signal for the advancing columns.

Fearing that amid the noise of the assault the sound might not be heard, he had the call repeated three times, when the troops advanced and carried the gateway with complete success. I feel certain that a single statement of this devoted and glorious deed will suffice to stamp it as one of the noblest on record in military history.

Its perfect success contributed most materially to the brilliant result of the day, and Lieutenants Home and Salkeld, with their gallant subordinates, European and native, will, I doubt not, receive the reward to which valour before the enemy so distinguished as theirs has entitled them. I have since heard that Lieutenant Salkeld is dead, but have not seen it in the returns myself.

Note.—The Victoria Cross was conferred upon Lieutenants Home and Salkeld, Sergeant John Smith, and Bugler Hawthorne, of the 52nd.

NAVAL AND MILITARY CALENDAR.

OCTOBER, 1909.

4th (M). H.M.S. *Hindustan* paid off at Portsmouth.
5th (T). H.M.S. *Hindustan* recommissioned at Portsmouth for Home Fleet.
15th (F). H.R.H. The Prince of Wales opened the New Harbour at Dover.
18th (M). H.M.S. *Inflexible* arrived at Spithead from New York.
19th (T). H M S. *Venerable* commissioned at Portsmouth for Atlantic Fleet.
20th (W). XIVth Brigade, R.H.A. and XIXth Brigade R.F.A. embarked at Southampton for South Africa.
23rd (Sat). The Tsar met King of Italy at Racconogi.
25th (M). Anniversary of the Battle of Agincourt. Presentation by His Majesty the King of Colours to the Royal Regiment of Norfolk Yeomanry and the 4th and 5th Battalions of the Norfolk Regiment.
28th (Th). Launch of first-class armoured cruiser *Indefatigable* at Devonport.
,, ,, Launch of second-class cruiser *Gloucester* from Messrs. Beardmore's Yard at Dalmuir on Clyde.
,, ,, Launch of first-class battleship *Mirabeau* at Lorient for French Navy.
29th (F). Revolt of Greek Torpedo Flotilla and Seizure of Arsenal at Salamir by the Mutineers under Lieutenant Typaldos.
30th (Sat). Launch of second-class cruiser *Liverpool* from Messrs Vickers' Yard at Barrow.
,, ,, Greek Naval Mutiny collapsed.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.—*Boletín del Centro Naval.* Buenos Aires: July and August, 1909.—"Naval Hygiene." "Proposal for the Employment of Dirigible Balloons in the Navy for Scouting." "A Radiographic Network and Lighthouses on the Coast." "Promotions by Selection in Time of Peace." "Modern Battleships."

Austria-Hungary.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 11. Pola: November, 1909.—"Deep Sea Diving" (*continued*). "Armour Plates and Armour-Piercing Projectiles." "Flashlight-Torsiometer." "Russian Naval Estimates for 1909." "The Combined Manœuvres of the French Mediterranean and Northern Squadrons, 1909." "The Conclusions of the French Superior Council of the Navy in Regard to the Development of the Fleet and Dockyards." "Prize Firing in the Italian Fleet." "The Cabin Cruiser *Pioneer*." "The New Distribution of the Fleet in France." "List of those Powers which Accepted the Declaration of Paris of 1856."

Brazil.—*Revista Maritima Brazileira.* Rio de Janeiro: August, 1909.—"The Metallurgical Industry in Brazil." "The "Deslandes" Aeroplane." "Practical School of Artillery, "No. 3."" "The Brazilian Navy." "The Present State of French Naval Artillery." "Time of Construction of Modern Ships of War."

Chili.—*Revista de Marina.* Valparaiso: July, 1909.—"Protection of the National Mercantile Marine." "What is the Best Armament for Our Ships of War?" "The Naval General Staffs of the Principal Naval Powers." "The Crisis in the French Navy." "Political and Military Study of Japan" (*continued*). "The Behaviour of Cordite."

France.—*Revue Maritime.* Paris: August, 1909.—"Aviation." "Battle Practice at Sea." "The Combined Manœuvres of the Italian Navy and Army."

La Marine Française. Paris: October, 1909.—"The Enquiry into the State of the Navy" (*continued*). "The Reforms of the New Minister of Marine." "The Boiler Question." "Their Naval Progress." "The Promotion of Officers in the Navy." "The Duty of the Chief of the Staff."

La Vie Maritime. Paris: 10th October, 1909.—"The Appointments to High Commands." "The Detractors of the Navy." "The Success of the Large Tube Boilers." "Naval Gunnery." "The Budget of 1910."

15th October.—"Our Building Yards." "New High Appointments." "The Cost of the Navy and M. Doumer's Report on the Naval Estimates for 1910." "Our Future Battleships." "The Firing at the *Iéna*." "An Italian Opinion of the French Fleet." "New Type of English Submarine."

Le Yacht. Paris: 2nd October, 1909.—"The Genesis of Naval *Matériel*" (*concluded*). "Yachting Notes." "The Navy and Aeronautics." "The German Battleship *Schleswig-Holstein*." "Honours and Precedence." 9th October.—"Proposed New Constructions." "Yachting Notes." "The Evolution of the Austrian Navy." "The Raising of Sunken Ships." 16th October.—"The Cadets." "Yachting Notes." "The Evolution of the Austrian Navy" (*continued*). "Hudson's Ship, the *Halve Maen*." "Motors at the Exhibition of Aerial Locomotion." "The English Submarine "D.1."" 23rd October.—"The Reform of Tactics." "Yachting Notes." "The Beginning of Steam Navigation." "The Evolution of the Austrian Navy" (*concluded*). 30th October.—"The Reorganisation of the Administrative Services of the Navy." "Yachting Notes." "The Gabet Automobile Torpedo."

Le Moniteur de la Flotte. Paris: 2nd October.—"New Constructions." "The Employment of Cadets." "The Budget for 1910." "The Torpedo School Division." 9th October.—"The Net Cost of New Constructions." "New Reforms: Reorganisation of the Superior Council of the Navy." 16th October.—"Factories and Fleet." "Reforms Continued." "Duties of the Vice-Admirals, Inspector-Generals of the Fleet." 23rd October.—"Annexe of the New Constructions." "The Programme of Admission to the Naval School." "The Navy in Parliament." 30th October.—"The New Tactics." "The Pay of Officers."

GERMANY.—*Marine Rundschau.* Berlin: November, 1909.—"The Political Crisis in England." "History and Meaning of the "Drago Doctrine."" "The Hudson-Fulton Celebrations." "Fulton's Submarine." "The Provision of an International Book of Maritime Law."

ITALY.—*Rivista Marittima.* Rome: September, 1909.—"The Education of the Young and the Royal Naval Academy." "Remarks on the Solution of the Trangle of Position without Trigonometrical Calculations." "The Report of the Commission of Enquiry into the State of the French Navy." "The Occupation of Nice and the Bombardment of Oneglia."

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon: August, 1909.—"Life in the Forest." "Treaty of Commerce with Germany." "Genealogical and Biographical *Data* of some Fayal Families."

Annaes do Club Militar Naval. Lisbon: September, 1909.—"Some Ideas about the Organisation of the Service Afloat." "A Probable Enemy." "The Instruction and Education of the Officers of the Fleet." "The Evolution of the Torpedo-boat." "The War in Guinea: The Island of Bissau."

SPAIN.—*Revista General de Marina.* Madrid: October, 1909.—"New Possible Causes of Explosions of Powders." "Astronomy Applied to the Navigation of Fast Ships." "The Struggle of the Naval Artillery and Projectiles Charged with High Explosives." "The U.S. *Dreadnoughts.*" "The *Nautilus* at Montevideo."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 7th October, 1909.—"Fleet Paroxysm." "Echoes of the Kaiser-Manœuvres." "Krupp's Monopoly." 14th October.—"Enough of Criticism!" "The Question of Umpires in the Army." "Maxwell's Wellington." 21st October.—"The *Rapprochement* between Russia and Italy." "We Need Criticism!" "The Demands of Our Navy." "The Italian *Revanche* Idea." "The New Musketry Training of the *Ersatz-Reservists.*" "The Telephone Equipment of Our Infantry." 28th October.—"What is to be Learnt from the Ferrer Incident?" "A New Edition of Part I. of the Service Regulations Required." "The Spanish and the Austrian Military Judicial Procedure."

Streffleur's Militärische Zeitschrift. Vienna: October, 1909.—"Garibaldi's Fight against Austria." "Border Fighting." "Experiences of the Macedonian Reform-Gendarmerie Officers." "An Applicable Example of the Attack on a Fortified Field Position." "Fire Fight of the Fortress Artillery with the Repeating Carbine." "A Voice from the Mountain Artillery." "The Changes in the Position of Officer-Aspirants as regards the Military Penal Code." "The Terrain Instruction at the Military Schools." "Communications from the Army Musketry Schools."

Kavalleristische Monatshefte. Vienna: October, 1909.—"From the Diaries (1859 and 1866) of Graf zur Lippe-Deissenfeld." "What the Fashion Decrees!" "Raids." "The Cavalry Attack on 24th June, 1866." "Cavalry Studies." "Thoughts on the Training of Remounts." "The Psychology of the Horse." "The Technical Methods of the Intelligence Branch of Modern Armies, in especial as regards Transmission of Orders." "The Cavalry Spirit in the Time of Napoleon." "Remounts in France and Germany." "A Russian Criticism of the Swedish Cavalry." "Tactical Problems for the Cavalry Officer."

BELGIUM. — *Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th September, 1909.—"The Cavalry Divisions at the Imperial German Manœuvres, 1908" (*continued*). "Reorganisation of the French Artillery" (*continued*). "Manœuvre Regulations for the German Army (22nd March, 1908)" (*concluded*). 30th September.—"The Cavalry Divisions at the Imperial German Manœuvres, 1908" (*concluded*). "Reorganisation of the French Artillery" (*concluded*).

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st October, 1909.—"Two Manœuvres with Real Firing at Sissonne in 1908." "War and Compulsory Service" (*continued*). "Infantry Support of Artillery." "Organisation and *Encadrement* of Infantry" (*concluded*). "The Question of Light Artillery for the Batteries of Cavalry Divisions." 15th October.—"Two

Manœuvres with Real Firing at Sissonne in 1908" (*concluded*). "For the Great Force of the Army and the Better Health of the Nation." "War and Compulsory Service" (*continued*). "Advantages and Inconveniences of the New Gymnastics" (*concluded*). "In Morocco." "Importance of the Advance in the Japanese Tactics."

Revue d'Infanterie. Paris: September, 1909.—"Battle Firing." "The New Manœuvre Regulations of the Spanish Infantry" (*concluded*). "The Infantry Combat: The Moral Factor" (*concluded*). "The Military Salute in France and Abroad." "The Japanese Army: Transmission of Orders and Reports in the Field."

Revue de Cavalerie. Paris: September, 1909.—"Cavalry: The Regimental School (Mounted Battle Training)." "Our Cavalry in the Next War (General von Bernhardi)" (*continued*). "Two Proposals for the Reorganisation of the Cavalry." "A Study on the Precociousness of the Cavalry Horse."

Revue d'Artillerie. Paris: August, 1909.—"Microscopic Examination of Skins." "The Theory of Aeroplanes." "Close Defence of a Covered Artillery Position."

Le Spectateur Militaire. Paris: 1st October, 1909.—"New Artillery Tactics." "Strategical Considerations on the Campaign of 1800" (*continued*). "Manœuvring in Woody Country" (*continued*). "Letters of Major Kretschman" (*continued*). 15th October.—"New Artillery Tactics" (*concluded*). "Strategical Considerations on the Campaign of 1800" (*continued*). "Manœuvring in Woody Country" (*concluded*). "Principles which should Serve as a Base for the Organisation Laws" (*continued*). "Covering Manœuvres" (*continued*).

Revue Militaire Générale. Paris: September, 1909.—"Observations *à propos* of the Regulations of 22nd March, 1908, on Field Service in the German Army." "Method of Instruction for Battle." "The Brevet of the Three Arms." "The Covering Detachment in Mountains" (*concluded*).

Revue d'Histoire. Paris: October, 1909.—"The Dromedary Regiment." "The Campaign of 1813: The Preliminaries." "The Prussian Army after the War of Deliverance." "The Mitrailleuse in 1870" (*continued*). "The War of 1870-71: The National Defence in the Provinces" (*continued*).

Revue Militaire des Armées Etrangères. Paris: October, 1909.—"Legislative Military Work in Italy from January, 1907, to October, 1909." "The U.S. Army in 1909" (*continued*). "Subaltern-Grade Schools in the Norwegian Army."

GERMANY.—*Militär-Wochenblatt.* Berlin: 2nd October, 1909.—"General von Schlichting's Birthday." "The Fortress in War." 5th October.—"Prince Albrecht of Prussia." "Two Hundred and Fifty Years Ago: No. 9.—The Great Elector in Upper Pomerania against the Swedes." "The Fortress in War" (*continued*). 7th October.—"The Fortress in War" (*continued*). "A New Tactical Handbook." "Two Hundred and Fifty Years Ago" (*continued*). 9th October.—"Strengthened Cavalry Brigades." "The Fortress in War" (*continued*). "A Soldier's Paper." 12th October.—"The Fortress in War" (*concluded*). "Race Winners and the Breeding of Thoroughbreds." "The Chilian Army." 16th October.—"Ulm and Metz." "Recruit Training." "Fortress Exercises" (*concluded*). "The Present Stage of Development of the Russian Military Schools." 19th October.—"Port Arthur" (*continued*). "The Spanish War in Morocco" (*continued*). "Recruit Training" (*concluded*). 21st October.—"The Handling of Cavalry in Battle against Infantry." "What Lessons are to be Learnt from the Fighting Round Port Arthur in the matter of Coast Fortifications" (*continued*). 23rd October.—"The Spanish War in Morocco" (*continued*). "The Present Stage of Development of the Russian Military Schools" (*continued*). 26th October.—"A Hundred Years Ago: The Tyrol" (*continued*). "The Danish Army according to the New Legislation." "A Geographical Journal." 28th October.—"General von Schlichting: Obituary Notice." "The English Manœuvres." "A Hundred Years Ago: The Tyrol" (*concluded*). 30th October.—"The 70-Years' Military Jubilee of H.R.H. the Prince Regent Leopold of Bavaria." "The Commanding Generals of the German Army from 1889 to 1909" (*continued*). "The Present Stage of Development of the Russian Military Schools" (*concluded*).

Artilleristiche Monatshefte. Berlin: October, 1909.—"Ballistic Observations." "The Disadvantages of Repeated Changes of the Regulations." "Six Fire-Problems for Field Batteries." "The French Artillery in Night Fighting." "The Question of Fighting Airships." "The Field Howitzer Question." "Foot Artillery Considerations."

Jahrbücher für die Deutsche Armee und Marine. Berlin: October, 1909.—"New French Tactics" (*concluded*). "Why Cannot the Howitzer become the Principal Weapon of the Field Artillery?" "Fortress War in Theory and Practice: Belfort—Port Arthur." "What Changes in Organisation and Armament have the Experiences of the War in East Asia brought the Japanese" "The Education of the Soldier" (*concluded*).

ITALY.—*Rivista di Artiglieria e Genio.* Rome: September, 1909.—Has not yet been received.

Rivista Militare Italiana. Rome: 16th October, 1909.—"Our Infantry Tactics." "Relation between Geography and History" (*concluded*). "Things African." "The Military Decadence of the Most Serene Republic of Venice." "The Armies of Europe." "A New and Important Chapter, etc." "Tripolitana." "The Volunteers." "The Moulding of the Military Character." "Notes on Manœuvres on Interior Lines." "The Valley of Susa."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid: 1st September, 1909.—"Napoleon and the Peninsular War." "The Principal Arms and the Auxiliaries in the Struggle for Positions in the Field." "A Grand Diplomatic Soldier" (*continued*). "The Present Times and the Grand War." "The Roll of Honour under the Empire." "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School in 1907" (*continued*). "The Gun: Its Physiology and its Psychology." 15th September.—"Napoleon and the Peninsular War. No. 2." "A Grand Diplomatic Soldier" (*concluded*). "The Present Times and the Grand War" (*continued*). "Report on the Musketry

Course by Infantry First-Lieutenants at the Central Musketry School in 1907" (*continued*). "The Roll of Honour under the Empire" (*continued*). "The Principal Arms and the Auxiliaries in the Struggle for Positions in the Field" (*continued*). "Aerostation in Our Army."

Revista Científico- Militar y Bibliotéca Militar. Barcelona: 10th October, 1909.—"The Operations from the 16th to the 30th September." "The Equation of the Modern Army." "The Siege of Baler, Judged in the View of U.S. Army Officers." "Spain in Morocco."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: October, 1909.—"The Swiss in Italy" (*concluded*). "Training Regulations for the Swiss Infantry." "The French Army Corps Manœuvres in the Bourbonnais in 1909." "Sheer Line Bridges" (*concluded*).

NOTICES OF BOOKS.

The Life and Letters of James Wolfe. By BECKLES WILLSON. (Illustrated.) London: Heinemann. 18s. net.

We have already several biographies of the victor of Quebec. The memoir by Robert Wright, published some fifty years ago, is an interesting and well-written book, but is now rarely to be found; the short biography by Mr. A. G. Bradley is of high merit; and that written quite recently by Mr. Salmon is interesting and compact.

The career and character of General Wolfe form, however, so attractive and important a study to Englishmen that there is still room for Mr. Beckles Willson's biography, by far the fullest and most comprehensive yet published. Mr. Willson, too, is an enthusiast on the subject of his hero, being by birth a native of the great Dominion which Wolfe's victory added to the Empire; and he has not only devoted many years to the study of Wolfe's career, but has actually settled in his birthplace, and lives in the very house in which he was born. Thanks to these circumstances, Mr. Willson has been able to obtain an extraordinarily complete collection of Wolfe's letters, which are of the highest merit and interest; their preservation showing how fully his greatness was appreciated by his family and friends. Wolfe was, as Mr. Willson shows, not only a great soldier and a high-minded patriot, but a man of great charm of character, who exercised in his too short lifetime a strong influence over all persons with whom he was brought in contact, and in spite of a somewhat hasty temper and an occasional acerbity of speech, was almost universally beloved.

The minute account given by Mr. Willson of the family history, education, and early life of Wolfe is of great interest, and affords innumerable sidelights on the social and military history of the reign of George II., which almost exactly coincided with the period of Wolfe's life.

Born in 1727, the son of a distinguished officer who had served through the wars of Queen Anne, Wolfe entered the army at the age of fourteen and almost immediately accompanied his regiment, the 12th Foot, to the war of the Austrian succession. When only sixteen years old he distinguished himself at the Battle of Dettingen, and was made Adjutant of his regiment. He served in the Supression of the '45, was wounded and again highly distinguished himself at Laufeld in 1747, and became a Major in the 33rd Regiment in the same year. Twelve months later he received the officiating command of the 20th Regiment, and in March, 1750, at the age of twenty-three, was promoted Lieut.-Colonel of that regiment. This extraordinarily rapid promotion was the result of merit alone.

Wolfe commanded the 20th for eight years, and by his firm discipline, progressive system of education of officers, and the great care which he bestowed on his men, made his regiment the model of the whole army. His independence of character led him to introduce many improvements in organisation, drill, and musketry which have formed a permanent part of our military system.

In 1758 Wolfe commanded a brigade at the siege and capture of Louisbourg, in Nova Scotia, and in the following year he was selected by Pitt for the command of an independent force of 9,000 men, which was to take part in a combined operation for the capture of Quebec from the French Army, under the Marquis de Montcalm.

The story of Wolfe's difficulties and disappointments, of his final victory, and of his death at the moment of triumph, is one of unfailing interest. It is told in full detail and with a wealth of additional information by Mr. Beckles Willson. Among other points elucidated, there is full proof of the fact that the final choice of a point of attack which secured victory, in the face of difficulties that seemed insurmountable, was Wolfe's own. This has of late years been disputed, but Mr. Willson makes it clear that all the credit of the victory belongs to Wolfe, just as all the blame would have been his had his attack failed.

This very full and interesting study of the life of one of England's greatest soldiers and most devoted sons is cordially recommended to the readers of this JOURNAL. The book is one that cannot be read without profit, and the admirable collection of illustrations with which it is enriched, lends it no small additional charm.

The Army Annual for 1909. Edited by Major B. F. S. BADEN-POWELL, late Scots Guards. The Army Press. 7s. 6d.

The second issue of this useful military work of reference will be generally welcomed, although its publication so late in the year as August is somewhat to be regretted. In addition to a good deal of general information on Army matters, there is an interesting *résumé* by Colonel H. C. Wylly, C.B., of the "Manœuvres of the Year and the Lessons to be Learnt from them," dealing not only with our own but with those in France, Austria, Germany, and Italy. Colonel Wylly supplied a similar *résumé* last year, and the Editor is to be congratulated on having secured the services of so competent a writer on military matters as Colonel Wylly is recognised to be. The Editor contributes himself a short paper on the "Progress of Aerial Navigation," in which subject he is an expert, and we must hope that next year he will be able to devote more space to it, in view of its rapidly increasing importance. Another useful chapter is devoted to a *précis* of the last Report of the Army Medical Department, which, it is satisfactory to note, shows that the health of the British Army compares favourably with that of the Armies of the other Great Powers. The chapter in the Report on the Physical Training of Recruits is of especial interest. Summing up, the Director-General points out : "There is no rapid method of making a man capable of withstanding prolonged exertion. He must be well fed, and his work must be tempered to his habits. The smoker and the man who indulges in alcohol cannot, others things being equal, get into condition so quickly as the non-smoker and abstainer, and the former class will never attain such a pitch of physical excellence as the latter ; therefore, the training should in all cases be very gradual, of a mild character, and to some extent kept up during military service." In conclusion, Sir A. Keogh lays down that: "Men doing hard work require an abundant supply of fresh air. Physical training, therefore, should be carried on as much as possible in the open air. Gymnasia should have the utmost ventilation that can be provided, and should be artificially warmed in winter.

"The mind of the recruit should be developed as well as his body. Many of the physical exercises can be arranged so that the men become interested in the work."

Another chapter is devoted to the principal military inventions of the past year ; while the First Year of the Territorial Force is also dealt with.

Altogether, Major Baden-Powell is certainly to be congratulated on the results of the trouble he has evidently taken over his present compilation.

PRINCIPAL ADDITIONS TO LIBRARY, OCTOBER, 1909.

Questions Militaires d'Actualité—3e Serie. Les Grandes Manœuvres en 1908, La Psychologie Militaire de Napoleon, etc. By General H. Bonnal. Crown 8vo. 3s. (R. Chapelot et Cie.) Paris, 1909.

Studies in Applied Tactics. By Lieut.-General G. von Alten. Authorised Translation by Major C. H. Barth, U.S.A.. 8vo. 9s. (Franklin Hudson Publishing Co.) Kansas City, n.d.

Napoleon's Brothers. By A. Hilliard Atteridge. 8vo. 18s. (Methuen & Co.) London, 1909.

The Conquest of the Air. By Alphonse Berget. 8vo. 12s. 6d. (William Heinemann.) London, 1909.

A Beau Sabreur, Maurice de Saxe, Marshal of France: His Loves, His Laurels, and His Times, 1696-1750. By W. R. H. Trowbridge. 8vo. 15s. (T. Fisher Unwin.) London, 1909.

The Life and Letters of James Wolfe. By Beckles Willson. 8vo. 18s. (William Heinemann.) London, 1909.

The English Constitution. By W. Bagshot. Crown 8vo. 3s. 6d. (Kegan Paul, Trench, Trübner & Co., Ltd.) London, 1905.

The Elements of Commercial Law. By H. W. Disney. Crown 8vo. 2s. 6d. (Macdonald & Evans.) London, 1908.

British Railways, their Organisation and Management. By H. M. Ross. Crown 8vo. 5s. (Edward Arnold.) London, 1904.

Ports and Docks, their History, Working and National Importance. By Douglas Owen. Crown 8vo. 2s. 6d. (Methuen & Co.) London, 1904.

Charles XII., and the Collapse of the Swedish Empire, 1682-1719. By R. Nisbet Bain. Crown 8vo. 5s. (G. P. Putnam's Sons.) New York, 1906.

La Campagne du Maréchal Saxe dans les Flanders. Par le Capitaine Henry Piehat, Publié sous la direction de la Section Historique de l'Etat Major de l'Armée. 8vo. 12s. (R. Chapelot et Cie.) Paris, 1909.

Life in the Merchant Marine One Hundred Years Ago. By Samuel Jefferson, Master Mariner. Crown 8vo. (Presented.) (Charles North.) London, 1905.

Studies in Practical Topography. By Colonel H. T. Crook. 8vo. (Presented.) (Manchester Tactical Society.) Manchester, 1909.

Great and Greater Britain. By J. Ellis Barker. 8vo. 10s. 6d. (Presented.) (Smith, Elder & Co.) London, 1909.

An Almain Armourer's Album. Selections from an original MS. in the Victoria and Albert Museum, South Kensington. With introduction and notes by Viscount Dillon. Imp. fol. 63s. London, 1905.

Letters from the Peninsula, 1808-1812. By Lieut.-General Sir William Warre, C.B., K.T.S. Edited by his nephew, the Rev. Edmond Warre, D.D., C.B., M.V.O. 8vo. 10s. 6d. (Presented.) (John Murray.) London, 1909.

Military History for Examinations, 1910-11—*Questions on the Campaign in Virginia from April,* 1861, *to May,* 1863. by Lieut.-Colonel H. M. E. Brunker. Crown 8vo. 1s. (Presented.) (Forster, Groom & Co., Ltd.) London, 1909.

Rough Notes by an Old Soldier during Fifty Years' Service. By Major-General G. Bell. 2 vols. 8vo. 10s. (Day & Son, Ltd.) London, 1867.

Memoirs of George Elers, Captain in the 12th Regiment of Foot (1777-1842). Edited from the original MSS. by Lord MONSON and G. LEVESON-GOWER. 8vo. 12s. (William Heinemann.) London, 1903.

L'Espionage Allemand en France. By PAPL LANOIR. Crown 8vo. 2s. 6d. (Cocnaud et Cie.) Paris, 1908.

Memoirs of Theobald Wolfe Tone. Written by himself. Comprising a complete journal of his negotiations to procure the aid of the French for the liberation of Ireland, with selections from his diary whilst agent to the Irish Catholics. Edited by his son, WILLIAM THEOBALD WOLFE TONE. 2 vols. 8vo. (Henry Colburn.) London, 1827.

Armour and Weapons. By CHARLES FFOULKES. With a preface by Viscount DILLON. 8vo. 6s. 6d. (Presented.) (Clarendon Press.) Oxford, 1909.

Stray Notes on Military Training and Khaki Warfare. By Field-Marshal Sir CHARLES BROWNLOW. 8vo. (Presented.) (Women's Printing Society, Ltd.) London, 1909.

The Heart of the Antarctic. By E. H. SHACKLETON, C.V.O. 2 vols. 8vo. 36s. (William Heinemann.) London, 1909.

Across Papua. By Colonel KENNETH MACKAY, C.B. 8vo. 7s. 6d. (Witherby & Co.) London, 1909.

Kashmir. Described by Sir FRANCIS YOUNGHUSBAND, K.C.I.E. Painted by Major E. MOLYNEUX, D.S.O. 8vo. 20s. (Adam & Charles Black.) London, 1909.

Economic Inquiries and Studies. By Sir ROBERT GIFFEN, K.C.B. 2 vols. 8vo. 21s. (George Bell & Sons.) London, 1904.

Britain at Bay. By SPENSER WILKINSON. 8vo. 6s. (Constable & Co. Ltd.) London, 1909.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

OCTOBER, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

CONTENTS.

PAGE.
Part II. Section I. Books 1539

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II.

SECTION I.

NOTE.—1. *When the price is not given in Part II., Section I., it is not known.*
2. *In Part II., Section I., books whose titles are given in foreign languages as well as in English, are published in those languages, and are not translated.*

AERIAL NAVIGATION.

Aviation. (L'aviation.) By Captain F. Ferber, French Army. 250 pp., with numerous diagrams. 8vo. Paris, 1908. Berger-Levrault. 4/-.

Captain Ferber has done, perhaps, more than anyone else in France to develop the art and science of aviation, and his opinions deserve careful study. (In France the term "aviation" is confined to the flight of machines heavier than air.)

The book deals exclusively with aeroplanes (four pages only being devoted to remarks on ornithopters and helicopters), and is divided into two parts, the first part being historical and descriptive, and the last part mathematical. This historical and descriptive part commences with a lucid summary of the underlying principles of the flight and stability of aeroplanes. This occupies fifteen pages. Then follow one hundred and seventeen pages covering the history of the subject from Cayley (1809) to the present day. This portion is very fully illustrated and includes short accounts of the gliding experiments of Lilienthal, Pilcher, Ferber and the Wrights.

The more modern historical portion is confined to French experiments. A short *résumé* is given of the principal points considered to be established by the author's own experiments and finally about twenty-one pages are devoted to some interesting anticipations, some of which have already been realized.

The four pages devoted to the use of flying machines in war should be read, being as they are the views of an artillery officer who has made a thorough theoretical and practical study of aeroplanes.

There is a short note on some details of construction, followed by the mathematical portion, which occupies eighty-two pages. Conclusions based on mathematical argument cannot, in most cases, be accepted as final, owing to the uncertainty that exists as to several of the premises, but the author's mathematical analysis is worth studying. The theory of the screw propeller is well treated.

NOTE.—The author, a most brilliant officer, has since paid for his devotion to aviation with his life, having met with a fatal accident whilst making a flight with his aeroplane at Boulogne.

The Aeroplane of the Brothers Wright. (L'aéroplane des Frères Wright). 30 pp., with diagrams. 8vo. Paris, 1908. Berger-Levrault. -/10.

This book contains:—

(1) A report presented by the Brothers Wright to the Aero Club of America in 1906, giving details of their progress to date.

(2) The conditions of contract for the supply of an aeroplane, issued by the Army Board of Ordnance and Fortifications of the U.S.A. in 1908.

(3) Particulars of trials carried out by Orville Wright at Fort Meyer in September, 1908, up to the time of the accident resulting in the death of Lieutenant Selfridge.

(4) Particulars of the French patent specification deposited by the Wright Brothers in March, 1904, together with drawings and some explanatory information.

(5) Description of the machine with which Wilbur Wright made his first experiments in France in 1908.

ARTILLERY.

Austro-Hungarian Artillery. Riding and Driving Manual. (Reit- und Fahrinstruktion für die k.u.k. Artillerie). Official. 166 pp., with several illustrations. 8vo. Vienna, 1909. k.u.k. Hof- und Staatsdruckerei. 1/-.

The study of this manual is recommended not only to artillery but also to cavalry officers.

The care taken by the Austrians in the training both of horse and rider is probably well known, but while the cavalry manual of some years ago gave in detail the system of training peculiar to the Austrians, this present publication deals with the question perhaps even more carefully and has the advantage of being the latest official authority. The instruction of the recruit is, as before, divided into progressive periods and a similar procedure is followed in the case of the remount. As is customary throughout the Austro-Hungarian service, the recruit in the first period of his instruction is not permitted to touch the reins.

Jumping, and the passage of obstacles when driving, are treated at some length. With regard to the former, however, it is laid down that for troop-horses no jumps shall be more than 2 feet 6 inches high or more than 5 feet broad, as it is held that "if larger obstacles are taken, many horses lose heart. the weaker ones being ruined; if the horses can make sure of readily taking those specified, then in case of need they will be able to overcome more formidable ones if properly handled." Vaulting and the swimming of horses are also dealt with, in the latter case the horse is guided with one hand, the other seizing the mane about two hands' breadths above the withers.

Field artillery is taught to drive at the gallop, a special section at the end of the book dealing with the various limitations imposed on the heavy howitzer batteries.

Two Lectures on Field Artillery. (Deux conférences sur l'Artillerie de campagne). By Captain Héring. 80 pp. 8vo. Paris, 1909. Chapelot. 1/4.

The primary object of the two lectures which have now been reproduced in book form was to make officers of other arms familiar with the practical working of artillery in the field. Captain Héring, therefore, treats his subject in a plain and straightforward manner, and his language, as far as may be, is devoid of technicalities. In the introductory remarks to his first lecture he points out how essential it is, if mutual co-operation is to be secured, that all officers should be acquainted with the principles which govern the handling of arms other than that to which they belong. He contends that the science of artillery tactics cannot be grasped without a knowledge of the weapon with which the artillery is armed, and therefore devotes the first lecture to a description of the 75-c.m. gun, its technical employment and efficacy. The second lecture treats of the tactical employment of artillery, and its joint action with the other arms. To infantry officers in particular the lectures afford useful and instructive reading.

Considerations regarding Artillery Work in Sieges. (Considérations sur les services de l'artillerie dans les sièges.) By Colonel Rouquerol. 68 pp. 8vo. Paris, 1908. Chapelot. 1/2.

Colonel Rouquerol considers that insufficient importance is attached to the study of siege warfare, seeing that a large army could operate in no European theatre of war without moving in close proximity to some well-armed permanent fortification, the capture of which would necessitate the employment of a fully-equipped siege train.

He divides his work into two portions, the first dealing with the period prior to the opening of fire by the siege batteries, the second with that culminating in the occupation of the first line of defence.

The discussion regarding the best means of obtaining satisfactory observation of fire is very detailed, and of considerable interest to all artillery officers

As might be expected, frequent reference is made to the siege of Port Arthur notably as illustrating the necessity for careful preliminary reconnaissance.

The Employment of Field Artillery. (Impiego dell' Artiglieria Campale). By Colonel G. Castellani. 60 pp. 12mo. Rome, 1908. Vaghera. 1/2.

This book contains some useful information as to the artillery methods of the leading European Powers. A study is made of the leading lessons as regards artillery to be drawn from the Russo-Japanese War, a special effort being made to throw light on the difficult question of co-operation between the three arms.

BOOKS OF REFERENCE.

The Rise and Progress of the British Explosives Industry. Published by the Explosives Section of the VIIth International Congress of Applied Chemistry, and edited by E. A. Brayley Hodgetts. 418 pp., with numerous illustrations. 4to. London, 1908. Whittaker. 15/-.

This elaborate compilation contains a complete history of the manufacture of explosives in this country, and traces the development and uses of various kinds of explosives from their discovery up to the present day.

The subject is dealt with in two parts, namely, "Historical Part" and "Descriptive Part." The latter contains a description of "Existing Government establishments" and of "Private establishments," and gives an account of their origin and subsequent history. The "Historical Part" is of greater interest from a military point of view and contains special articles by recognized authorities on the various subjects dealt with.

As a book of reference this work may be considered of great interest.

Topography of the Duchy of Schleswig. By H. Oldekop. 1092 pp. (including index and appendices). 4to. Kiel, 1906. Lipsius and Tischer.

This book is an exhaustive treatise on the geography, topography, and resources of Schleswig. It commences with a short history of the Duchy from the time of Charlemagne to the present day. The author impresses on his readers the fact that even in these early ages Schleswig was subject to Germany. The next portion contains a geographical summary followed by a list of districts and places arranged in alphabetical order, with a paragraph of topographical and miscellaneous information about each of them. Next follow chapters on the division of the country into districts, conditions of land tenure, and present condition of agriculture. The remaining nine hundred pages consist of ten appendices, each of which is devoted to a district (Kreis). The parishes in each district are arranged alphabetically, and some information is given regarding their area, population, and resources.

Topography of the Duchy of Holstein. (Topographie des Herzogtums Holstein.) By H. Oldekop. 2 volumes, besides appendices and index. 4to. Kiel, 1908. Lipsius and Tischer.

The general arrangement of these two volumes is similar to that followed in the Topography of the Duchy of Schleswig (see above) to which they form a sequel. The introductory chapters occupy seventy-five pages; the remainder of the first volume and the whole of the second volume consists of appendices in which all the districts of the Duchy of Holstein are dealt with in detail, as well as those of Lauenburg, Lübeck and Hamburg.

The Army Annual. Edited by Major F. S. Baden-Powell. 447 pp. 4to. London, 1909. The Army Press. 7/6.

The contents of this year's edition differ from those of previous years in so far as information contained in the latter, which has become out of date, has, to a great extent, been omitted.

Information with regard to the health of the Army and the Indian Military Supply Department has been added, and an account of the progress of the Territorial Force and aerial navigation is given. Lists of "Public inquiries into Army matters since 1800" and "Interesting questions and answers in Parliament" are also for the first time included in this volume, which maintains the same general features as the last edition.

Spanish and English Commercial and Technical Terms. By R. D. Monteverde. 120 pp. 8vo. London, 1908. Whittaker. 2/-.

This book contains a series of useful phrases, principally of a commercial character; there is, however, practically nothing dealing with motor cars, or technical mechanical terms.

CAVALRY.

The Rôle of Cavalry in Reconnaissance and Security Duties. (Rôle de la Cavalerie dans le Service d'Exploration, de Sureté, et de Couverture.) By Captain Janet. 36 pp., with 6 maps. 8vo. Paris, 1909. Chapelot. 1/2.

This short pamphlet endeavours to prove that, as a general rule, too much is expected of the cavalry as far as concerns obtaining information, and affording a commander a clear insight into the actual position of affairs in the theatre of war. The writer claims that the old theory of superiority in mounted troops ensuring the receipt of full and accurate intelligence is exploded, and that under modern conditions it is impossible for the cavalry, however great its superiority in numbers and handling, to obtain information on which a commander can place implicit reliance. He asserts that, though secret agents and kindred methods of collecting intelligence can be utilized with advantage, no true reconnaissance can be carried out unless a force of all arms is employed. In support of his contention he quotes specific instances from the war of 1870 tending to show that the mounted troops, sometimes under the most advantageous conditions, failed completely to "clear up the situation," owing to the lack of the support of the other arms.

Cavalry at the "Manœuvres du Centre." (La Cavalerie aux Manœuvres du Centre). By Colonel Aubier. 32 pp. 8vo. Paris, 1908. Berger-Levrault. -/10.

This short work is less a description of the action of the cavalry at the Manœuvres du Centre" than a general treatise on the employment of mounted troops considered under the three headings of strategy, tactics, and the pursuit.

The writer gives a subsidiary title to his work, namely, "Manœuvre fiction and war realities," and he points out how fallacious are the deductions of those critics who would minimize the value of cavalry in consequence of the small measure of success with which that arm usually meets in mimic warfare. This apparent lack of success he attributes to the fact that the demoralizing influences of the battlefield, such as fatigue and casualties, to which troops would in nearly every insance have been subjected previous to the cavalry onslaught, have not been taken into due consideration. He draws largely on the Russo-Japanese War to illustrate the use and misuse of cavalry in its strategic rôle.

What a Dutch Hussar Ought to Know on Field Service. (Wat een Hollandsch Huzaar te Velde Weten Moet.) By Lieutenant van Hoytema. 80 pp. 12mo. The Hague, 1909. Electrische Drukkerij.

This is a little handbook for the use of the rank and file of the Dutch cavalry; its object, as stated in the preface, is to give a concise summary of the points with which a cavalry soldier should be familiar on service. The book commences with a short summary of the forces in the Netherlands, and the customs of war, then follows information on map reading, duties on the march and hints on reconnaissance and orderly work. The latter part of the book deals with the service of security, advanced guards, outposts, method of challenging and method of occupying billets; the book concludes with some notes on health and first aid to the injured.

FORTIFICATION AND MILITARY ENGINEERING.

Improvised Bridges. (Ponts Improvisés.) By G. Espitallier and F. Durand. 284 pp., with 99 illustrations. 8vo. Paris, 1909. Doin. 4/-.

This volume is intended essentially as a guide to practical work in the field, and, as such, forms a most complete and concise book of reference. Military bridges are classed under the usual categories of floating, pier, and suspension, and various types of each are considered in minute detail, and their method of construction clearly shown by means of excellent illustrations. Calculations are given for estimating the carrying capacity of each type, and, though complicated details are avoided, the data are sufficiently concise for all practical purposes.

Special reference is made to the system invented by Lieutenant Tarron, which was tested in 1904 when a flood carried away the bridges in the village of Bozel. On this occasion a semi-permanent bridge on his system, with a span of 25 yards, was constructed in 72 hours. It is claimed that bridges of this type, without intermediary supports, can be used for a span of 50 yards, and though their camber appears somewhat excessive, their utility is undoubted in the case of mountain gorges when it is impossible to employ either floating or pier bridges, and when material for a suspension bridge is not forthcoming. A short chapter is devoted to light foot and other quickly constructed bridges, which are especially suitable in the case of advanced guards and other detached bodies of troops whose transport must be reduced to the lowest possible scale.

Our own manuals contain practically the same information regarding flying bridges as is given in the present volume, but there is much which will be new to the non-specialist officer in the paragraphs dealing with cordage and other make-shift suspension bridges.

Perhaps the most interesting chapter is that which deals with the bridging equipment of the French Army and that of the armies of other Powers; it concludes with a table giving the number of pontoons or boats taken into the field, the method of transport, length of bridge which can be constructed, &c., in the case of each of the various armies. The last chapter touches on the question of the preservation, destruction and restoration of the different bridges commonly constructed in the field.

Permanent Fortification. (Die Beständige Befestigung.) By Ritter von Brunner (Major, Austro-Hungarian Engineer Staff). 149 pp., 1 plan, with numerous plates and figures. 4to. Vienna, 1909. Seidel. 5/-.

The author of this well-known work, now in its seventh edition, states that he has arranged his subject in an altogether different manner to that adopted in the previous editions; for example, he has endeavoured to separate the technical details from the tactical and strategical portion of the subject. In addition, there is a great deal of new material, notably the plan of a modern girdle of forts, and what perhaps is of more particular interest to the British Army, a more detailed handling of coast defence and local or "blocking" works ("Sperrwerke") in hilly country.

The chapters are five in number:—

I.—Introduction.

II.—Use of permanent fortifications (with examples from Central Europe).

III.—Land defences—
  A. The "girdle" fortress.
  B. "Blocking" works.
  C. Special forms of land defences.

IV.—Coast defences—
  A. Remarks on warships.
  B. Effect of naval and fortress guns against ships.
  C. General arrangement of coast defences.
  D. Details concerning coast defences.

V.—Improvised or supplementary works.

HISTORICAL.

Reminiscences of Lieutenant-General Friedrich Karl v. Schmidt. Part II. (Erinnerungen aus dem Leben des General Leutnants Friedrich Karl v. Schmidt. II. Teil.) 150 pp., with 1 sketch map. 8vo. Berlin, 1909. Mittler. 3/2.

This volume is in continuation of Part I. of General von Schmidt's reminiscences, which was published by the Historical Department of the German General Staff in 1908. It covers the period from the mobilization of 1805 till April, 1813. Early in 1806, owing to complications which had arisen with England, the Ivernois Battalion, to which von Schmidt belonged, was ordered to form a line of posts along the East Frisian coast line. The British did indeed land on the island of Nordeney, but as they paid for everything they took, and as both sides knew that the state of war was more formal than real, their presence did not incommode the Prussian outposts. The Ivernois Battalion was not present at Jena. On hearing the news of this defeat it marched north-east, crossing the Elbe at Boitzenberg and finally joining Blücher's column in time for the disastrous action at Lübeck. Von Schmidt avoided capture by escaping in plain clothes into Danish territory. After the peace of Tilsit and the subsequent reductions of establishment he was fortunate enough to be retained in the army, thanks to Blücher's special intervention.

The last chapter begins with the news of the destruction of Napoleon's Grande Armée and the King of Prussia's famous "call to arms" to his people. The memoirs carry us, however, no further than the commencement of hostilities, and terminate abruptly in the middle of an account of an affair of outposts at Finkenwalde where the Kolberg Regiment, to which von Schmidt now belonged, was engaged.

The National War of 1812. (La Guerre Nationale de 1812.) Published by the Russian General Staff. Translated by Captain E. Cazalas, Historical Section of the French General Staff. Vol. III., 443 pp. Vol. IV., 481 pp. Vol. V., 448 pp.; each volume has an index. 8vo. Paris. Lavauzelle. 8/4 per volume.

The historical value of these volumes is very great, since they contain the whole of the enormous correspondence of the Russian War Minister, General Barclay de Tolly, from May to October, 1811.

In Volume III. and Volume V. an interesting light is thrown on the intelligence and secret service systems of the Russian Army. In Volume IV. all other matter is dwarfed by the historic despatch of General Barclay de Tolly to the Czar, which was the genesis of the strategy that destroyed the "Grande Armée." The Russian War Minister, after examining the causes that had contributed to the success of the French, lays bare the weak points in their organization and administrative methods. He points out that Napoleon's new method of war must in its turn be met by a still newer method, that of taking famine as an ally, avoiding all decisive battles and operating incessantly against the flanks and rear of the enemy. In no country could these methods be applied more successfully than Russia, with her wide spaces and her rigorous climate, while the hordes of irregular horsemen at the disposal of the Czar formed an admirable instrument for putting them into execution. The lines of advance open to Napoleon are then reviewed, with suggestions as to how each invasion should be met.

The want of a map forms a serious handicap to the reader.

History of the Campaign at the Beginning of 1813 and Preceding Events. (Geschichte das Frühjahrfeldzuges 1813 und seine Vorgeschichte.) Vol. 2. Events from the end of April to the Armistice. Series "History of the Wars of Independence, 1813-15." By Lieutenant-General von Caemmerer. 322 pp., with 16 appendices, notes and 5 maps. 8vo. Berlin, 1909. Mittler. 10/10.

This volume deals with the crossing of the River Saale by Napoleon, the operations leading up to the Battle of Bautzen, the retreat of the allies into Silesia and other events up to the declaration of the armistice.

The author criticizes Prince Eugene for his want of initiative in delaying to capture Merseburg until after the fall of Halle, but the error appears to lie primarily with Napoleon's Chief of the Staff owing to the restrictive nature of his orders.

Scharnhorst takes exception to Wittgenstein's "instructions" issued on 27th April, 1813, considering them as both "ceremonious and verbose." He submits that, given active cavalry, the position at Wurzen would have been quite a safe one, and that the line of retreat of the allies on Dresden was not liable to interruption. Clausewitz considers that offensive tactics would have been best for the allies on this occasion and that defensive tactics with the Elbe in their rear were unwise.

The author of the present volume questions Scharnhorst's criticisms, and is of opinion that a vigorous offensive by the allies in the direction of Lützen might have yielded great results without undue risk. Toll favoured a concentration near Altenburg in order to prevent Napoleon's advance on Leipzig; this is the plan which was finally adopted by Wittgenstein.

As a result of the imperfect reconnaissances of Wintzingerode and Ney on 2nd May, 1813, they failed to discover their proximity to each other. This fact and his failure to understand his orders caused Ney to miss the opportunity of dealing the enemy a severe blow.

Gneisenau considers that the allies were right in fighting at Grossgorschen, but that their plans were faulty.

The decision of the allies to retire into Silesia along the Austrian frontier was based on both strategical and political considerations. The objection to this plan was that Berlin was left open to attack, and that the lines of communication of the Russians became unduly long. As they were expecting reinforcements this was a matter of some importance. It appears, however, that, on the whole, the allies acted wisely.

Wittgenstein is criticized for not attacking the French when the latter were crossing the elbe, since the conditions were most favourable at that time.

Napoleon considered that the allied armies would separate after a defeat, and he based his strategy at the Battle of Lützen on this assumption. Want of cavalry prevented him from discovering his mistake in time.

The author contends that Wittgenstein should have fought at Bischofswerda or at Gödau instead of at Bautzen. Had he done so on 14th or 15th May he could have delivered a successful counterstroke, since he held the passages of the Elbe and was superior in numbers to the enemy.

Ney's failure to carry out the flank attack rendered Bautzen an indecisive victory for Napoleon. The author considers, nevertheless, that had the centre of the allied army been attacked at about 3 p.m. victory might have rested with Napoleon.

The engagement at Reichenbach again exemplified the inferiority of the French cavalry in this campaign, and the surprise attack at Hainau put an end, in the author's opinion, to the French pursuit. He therefore disputes Barclay de Tolly's criticism on this action.

The author contends that if Wittgenstein had made an attack in force on Macdonald at Gross Rosen and if Blücher had also attacked Marmont, success in the former case would have been certain, and in the latter probable. Napoleon would then have had to abandon his advance and concentrate his forces at Liegnitz. Wittgenstein's faulty tactics in not supporting Bülow, and Blücher's failure to use his opportunity resulted, instead, in the retirement of the allies on Schweidnitz. The author considers that Napoleon would have done better to have forced the allies away from the Austrian frontier before agreeing to an armistice, but his lack of cavalry and the hostile attitude of the Austrians appear to have influenced his decision.

Bülow's strategy at Hoyerswerda is severely criticized by Lieutenant-General von Caemmerer, who holds that a victory might have had considerable effect on the state of affairs at that time.

The French Conquest of Algeria. By Major G. B. Laurie. 210 pp., with maps. 8vo. London, 1909. Rees. 6/-.

This book contains a brief and simple narrative of the chief events in the fighting that went on, more or less continuously, between the years 1830 and 1857, and is the only history of this conquest published in the English language.

The author has not attempted a critical discussion on French policy or military strategy, but casts some doubts as to the true motives which induced France to undertake the subjugation of this warlike race. He, however, comes to the conclusion that "the debt that Europe owes to France for the conquest of this country has seldom been recognized. The results have been good for all, and all who care for the advancement of civilisation must acknowledge her noble effort for the good of the many peoples of Algeria."

Major Laurie has consulted many authorities to obtain his facts, but has followed M. Rousset where differences of statement exist.

The book is pleasantly and ably written and is interesting. There are three maps which give a good general idea of the country and show the position of all places mentioned in the narrative.

The Question of Fortresses in the Defence of States. (Grundlagen und Aufgaben der Reichsbefestigung). By Colonel J. Schön of the Austro-Hungarian Infantry. 112 pp., and 3 maps. 8vo. Vienna, 1909. Seidel. 2/9.

This book is a reprint of articles which appeared in the third and fourth parts of "Mitteilungen über Gegenstände des Artillerie-und-Geniewesens" of the current year. The title is somewhat of a misnomer, as the discussion is mainly confined to the influence exercised by the fortresses in the two campaigns of 1796-7 and 1866; the first twenty pages, however, contain remarks of more general application.

Whilst enumerating cases in which the possession of fortresses has exercised a harmful effect upon the general operations of a campaign, the author by no means adheres to the views expressed in the work "Influence of Fortresses in Military Operations" (by P. Rath), reviewed in the April number of this publication; on the contrary, he shows that the possession by the Austrians of the various fortresses in the two campaigns specified, contained much that was or might have been advantageous.

The 17th Army Corps at Loigny. (Le 17e Corps à Loigny). By Commandant de Sonis. 493 pp., with 9 sketches and maps. 8vo. Paris, 1909. Berger-Levrault. 5/-.

The Battle of Loigny, which was fought on 2nd December, 1870, is a battle of which the details are but little known and often misrepresented. It has, however, been the subject of much controversy. On the German side the general outline of the battle has been filled in without much difficulty, but on the side of the French the absence of supreme command, the separate action of the two army corps, and the failure of successive and detached efforts, make it difficult to get a clear grasp of events. The book which has been written by the son of the former commander of the 17th Corps, in order to refute unjust criticisms of his father's action in this battle, contains a precise and clear account of the events of the 2nd December.

Our Troops in Bosnia and Herzegovina, 1878. Vol. 6. (Unsere Truppen in Bosnien und der Herzegowina, 1878), Tuzla and Doboj. By Lieutenant Edmund von Horstenau. 86 pp., with some sketches and illustrations in the text. 8vo. Vienna, 1909. Stern. 2/-.

This small publication deals with the operations of the Austrian troops, under the Hungarian General Count Szepary, against the Bosnian insurgents from July, 1878, until the conclusion of hostilities in October of the same year.

Russo-Japanese War Monographs. Vol. XV. (Einzelschriften über den Russisch-Japanischen Kreig. 15 Heft). A supplement to O.M.Z. 30 pp., with 4 maps, 2 panoramic sketches, 2 photographs, and 1 "order of battle" (Japanese 12th Division). 8vo. Vienna, 1909. Seidel. 2/-.

This monograph deals with the operations of the Japanese 12th Division against a Russian detachment under General Herschelmann, which culminated in the action of Chiao-Tou or Siho-yen (called Sihejan in this work). It embraces the period 14th to 20th July, 1904. An appendix gives some textual reproductions of Japanese instructions and orders.

The volume begins with a description of the opposing forces and the theatre of operations, next follows a detailed account of the events under consideration, a concluding section being devoted to criticisms. Attention is called to the great anxiety which the Japanese displayed for the safety of their flanks.

The action of the second battalions of the Japanese 24th and 46th Regiments is likewise commented upon. The commander of a battalion of the latter regiment, noticing that the enemy in front of him was withdrawing, initiated an action which cost the Japanese many casualties and which was not in accordance with the plans of the divisional and brigade commanders. The enterprise of the Japanese battalion commander is, however, favourably judged. The disadvantages accruing to the Russians as a result of their line of retreat being almost in prolongation of their right flank is pointed out. Finally a eulogy is passed upon the energy and spontaneous co-operation of the Japanese regimental and battalion commanders, which stands out in glaring contrast to the Russian attitude, and is characterized as one of the principal factors contributing to the Japanese victories.

The maps show the general situation on 17th July and the different phases of the action of Chiao-Tou (Sihejan). The sketches show the view from and looking towards the Russian position. The photographs show the ground over which the Japanese attackers had to pass.

German Official Account of the Russo-Japanese War. Liao-yang. Authorised translation by Karl von Donat. 221 pp., with ten appendices and ten maps. 8vo. London, 1909. Hugh Rees. 10/6.

This volume is a continuation of the series of which parts have appeared from time to time, the last instalment, "Wa-fan-gou," having brought the history of the war down to the eve of the battle of Liao-yang, after the junction of the Japanese 2nd, 4th, and 1st Armies. The present portion, after a brief *résumé* of the situation, takes up the story on the morning of the 29th August, 1904.

The work suffers from the defects of the previous instalments, in that the names of places are transliterated after the German system. It is often very difficult to find villages on the maps, and since there is a large amount of detail in the account, it is at times fatiguing to a British reader. But the progress of the fight can be traced from the admirably clear way in which the forces are shown on the maps, and the last two chapters, describing the Russian retreat and commenting on the conduct of the battle, are models of lucidity.

Attention is drawn throughout to the nervousness which General Kuropatkin exhibited as to his line of retreat, and General Umezawa's small detached force, operating in the mountains miles to the eastward, is shown as exercising an undoubted effect upon the battle, owing to the exaggerated reports to which its presence gave rise. The alternative courses open to the rival commanders are discussed in the last chapter. General Kuroki's action in passing half his army (the 1st) to the right bank of the Tai-tzu Ho early in the action is adversely criticized, but is condoned since it arose from an erroneous belief that the Russians had commenced their retreat. On the other hand, his vigorous action when he discovered his error is most favourable contrasted with that of his opponent. The situation is summed up in the words: "The will to conquer, conquered."

The appendices contain details as to the strength of the opponents and their disposition at various dates.

Politics and War in Morocco. (Politica ed armi ad Marocco). By Captain G. Marietti. 188 pp., with 4 maps. 8vo. Turin, 1909. Casanova. 3/-.

This book is divided into three parts. In the first of these an interesting account is given of the existing condition of affairs in Morocco itself and of the "Morocco Question" as far as it affects the European Powers. Part II. contains an account of the fighting in 1906, 1907, 1908. Part III. is principally concerned with the events connected with Mulai Hafid's accession to power.

Rasplata (*The Reckoning*). By Vladimir Semenoff. Translated by L. A. B. 480 pp. 8vo. London, 1909. John Murray. 10/6.

This work has appeared as a serial in the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION. It is from the pen of the author of "The Battle of Tsushima," of which a translation was published in 1906, and is really a diary of his experience from the outbreak of war until the arrival of the Baltic Fleet in the Straits of Tsushima.

He was in Russia in January, 1904, and was ordered to join a ship in Port Arthur, where he arrived shortly after the outbreak of hostilities. In various capacities he served afloat until the sortie made by the Russian Squadron on the 10th August, 1904, at which time he was commander in the cruiser *Diana*, which escaped to Saigon and was there disarmed. Returning to Russia he joined the battleship *Suvoroff* as a supernumerary, and with the Baltic Fleet made the voyage to Tsushima, where he was wounded and taken prisoner.

Although the narrative is of absorbing interest, the information will be of more value to naval than to military readers.

General Wolfe. By E. Salmon. 242 pp., with index. 8vo. London, 1909. Pitman. 3/6.

This admirable study of the life and achievements of General Wolfe is one of the series of "Makers of National History."

In the first half of the book, Mr. Salmon briefly draws a clear and sympathetic portrait of the subject of the memoir. He gives an excellent idea of his character and of the manner in which he came to the front notwithstanding lack of private means and of influential connections.

The second half of the book contains a detailed account of the Quebec expedition up to the death of General Wolfe, at the very moment when success was assured. The plan of the St. Lawrence River and defences of Quebec render the description of the operations easy to follow.

Mr. Salmon makes use of the latest ascertained facts about the expedition, and shows that the success which attended it was due to General Wolfe's personality and plan for the final assault, and not to the action of his subordinates.

Field-Marshal Sir Neville Chamberlain, G.C.B. By G. W. Forrest. 504 pp., with index. 8vo. London, 1909. Blackwood. 18/-.

The record of this distinguished soldier's services in India is so closely bound up with the history of the country itself that, to appreciate the former thoroughly, it is essential to have a clear outline of the latter, and this the writer of Sir Neville Chamberlain's biography has given us in his admirable description of the stirring events with which this period of British rule in India was replete.

The subject of this biography landed, as a cadet of eighteen years of age, at Madras in 1837 and did not sever his connection with India until 1881, after five years in command of the Madras Army.

During this period he was actively employed in nearly every campaign which took place in that Empire, and it can be said, without exaggeration, that he distinguished himself in every one of these, both by his personal dash and bravery and by the soundness of his judgment, as shown by the numerous letters now published.

Although a stern disciplinarian he was full of human sympathy, and, notwithstanding the difficult positions in which he was frequently placed, he managed to gain the goodwill and hearty co-operation of all with whom he came in contact, by sheer strength of character and force of example.

The chapters dealing with the Indian Mutiny are among the most interesting in the book, and it is only by means of these private family letters that we are enabled to appreciate to the full the part which this daring and modest officer bore in the siege of Delhi, even when incapacitated through a severe wound from leading the troops in person.

To the sportsman the description of Chamberlain's expeditions in South Africa in search of lion will especially appeal, and the account of the hairbreadth escapes he had show clearly that his utter disregard for personal danger was not confined to the field of battle.

Mr. Forrest, in his concluding paragraph, says of Sir Neville Chamberlain: "His own letters and diaries through the long series of his years show how great personal valour was combined with a true spirit of kindliness, and humanity and skill in war were intertwined with a love of culture and a serious interest in great questions." The best word said of him was by another Warden of the Marches: "Chamberlain was the soul of chivalry." This opinion will be endorsed by all who read this interesting narrative.

The Life of Major-General Sir Charles William Wilson. By Colonel Sir Charles Watson. 397 pp., with maps and illustrations. 8vo. London, 1909. Murray. 15/-.

The varied career of this distinguished officer is well described by Sir Charles Watson, who has had access to Sir Charles Wilson's private letters, diaries and note books, from which a considerable number of extracts are given.

The earlier part of his service, of over forty-two years, was mainly spent in survey and boundary commission work in Canada, Servia and Palestine. The account of this work, though interesting, is overshadowed by the record of his connection with Egypt which lasted from 1882 until shortly after the return of the Nile expedition of 1885.

His letters and reports of this period will be read with great interest and show the clear insight he possessed of the general situation in Egypt and the Soudan, and at the same time dispose of the theory that he was in any way to blame for the failure of the expedition to reach Khartum in sufficient time to save General Gordon.

The maps are good and an excellent index facilitates reference.

The Life of Joachim Murat (1767-1815). Volume II. (Joachim Murat 1767-1815). By Prince Murat. 500 pp., with portrait. 8vo. Paris, 1909. Plon Nourrit. 6/-.

This volume consists entirely of Murat's correspondence during the years 1801, 1802, and 1803, during which period he was engaged in the pacification of Italy and in the establishment of the Italian Republic. An interesting light is thrown on Murat's administrative abilities and on the relationship existing between the Marshals in Napoleon's army.

Memoirs of General Griois (1792-1822). Vol. I. (Mémoires du Général Griois). Written by himself. 430 pp., with portrait. 8vo. Paris, 1909. Plon Nourrit. 6/6.

General Griois passed the greater part of his service in Napoleon's Horse Artillery and gives a very entertaining picture of regimental life at that period. Volume I., which brings his narrative down to 1812, contains no description of any of Napoleon's celebrated battles; but there is a good deal of military interest in his account of the Artillery School at Chalons, where Marmont, Foy and Duroc were Griois' contemporaries and in his description of the raw levies which formed the Republican armies, which Napoleon was to transform into the "Grande Armée."

Memoirs of the Chevalier de Grueber (Souvenirs du Chevalier de Grueber). Published by his nephew and translated into French by Captain de Maleissye-Melun of the French General Staff. 302 pp. 8vo. Paris, 1909. Perrin, 2/10.

A readable record of events between the years 1801 and 1817. The Chevalier, as an Austrian and Bavarian cavalry officer, participated in numberless actions of the many campaigns of the period named.

Twenty-five Years' Soldiering in South Africa. By a Colonial Officer. 447 pp., with portrait and map. 8vo. London, 1909. Melrose. 14/-.

This is a readable and interesting account of service spent for the most part in that well-known Cape Colonial Corps, the Cape Mounted Rifles. The author, the son of an officer of the British Army, originally desired to join the Imperial Army, but on the death of his father found it necessary to abandon this idea and decided to make his career with the military forces of one of the colonies. The news of the Zulu War and the Battle of Isandhlwana turned his thoughts to South Africa, and, proceeding there in 1879, he joined the Cape Mounted Rifles in September. His first year found him on active service in Basutoland, where the Cape Colonial Force was commanded by Colonel Bayley. The force was engaged in operations against Morosi who had established himself in his mountain stronghold which was assaulted and captured in November, 1879, the chief and five of his sons being killed. A few months of tranquility followed, but in July, 1880, the Gun War broke out in Basutoland, and the Cape Mounted Rifles entered the disaffected area in September. They had a trying time near Mafeking until reinforcements under Brigadier-General Mansfield Clarke arrived. For some months desultory fighting took place in Basutoland. Eventually an armistice was declared, and, after the proclamation of peace, Basutoland was handed over to the Imperial Government. The author was soon afterwards given a commission.

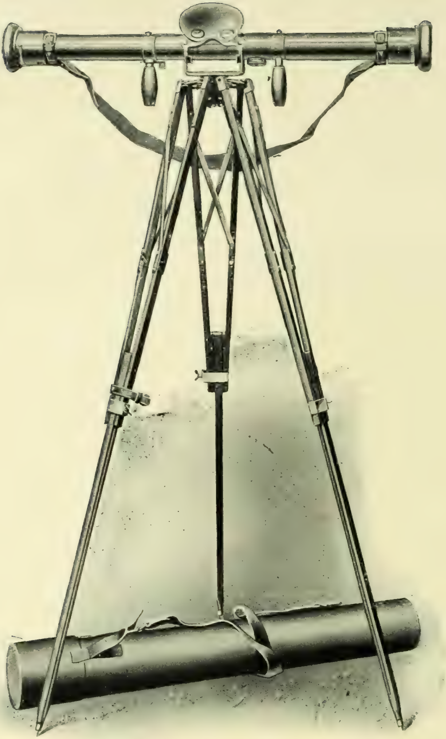
He then saw service in Pondoland, after which he was sent in command of a detachment of the Cape Mounted Rifles to Bechuanaland and Rhodesia.

From 1894 to 1898 his service was of a varied character and comprised duty in Pondoland, Griqualand West and Bechuanaland. During the South African War the author served with several irregular corps, and was for some time adjutant of Steinacker's Horse.

The chief interest of the book lies in the early chapters, which deal with the fighting in Basutoland, and in which "Colonial Officer" gives a graphic account of the difficult nature of the country.

(To be continued.)

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA



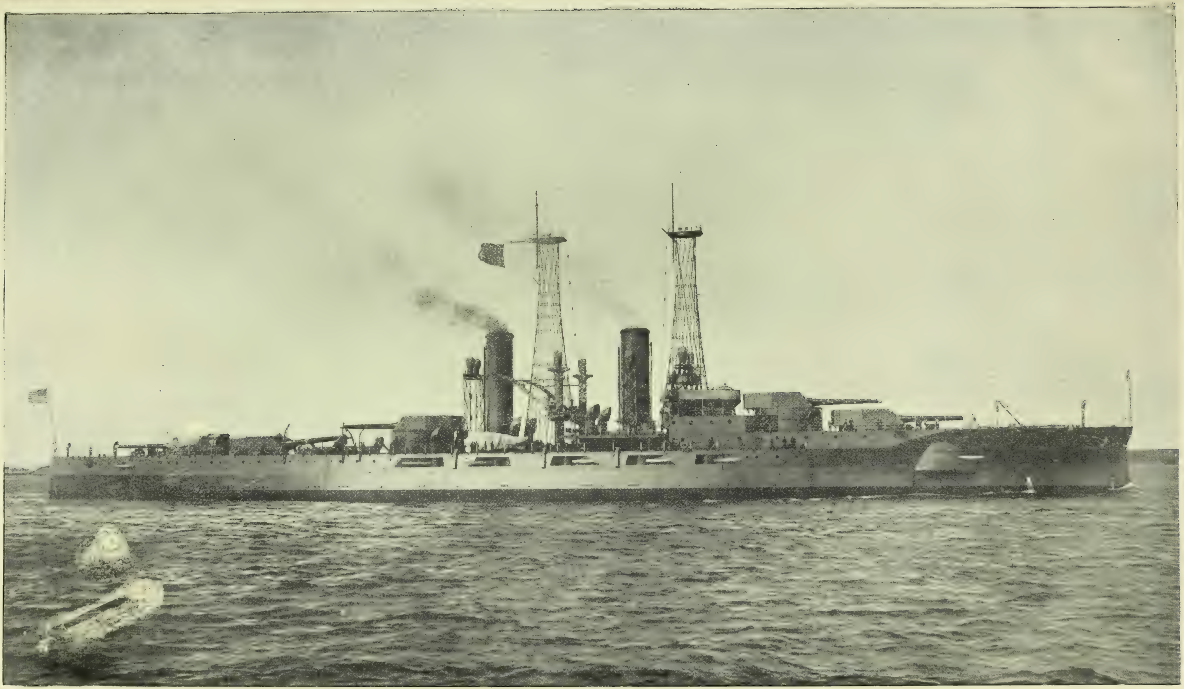
THE BARR AND STROUD RANGEFINDER
"F.T. TYPE." 26½ INCHES BASE.

For use with Cavalry, Artillery and Infantry, also for Navigational purposes on board ship.

Approximate uncertainty of observation:-

1 yard at 400 yards
9 yards ,, 1,000 ,,
40 ,, ,, 2,000 ,,
230 ,, ,, 5,000 ,,

Barr and Stroud,
Anniesland,
Glasgow



THE UNITED STATES NEW FIRST-CLASS BATTLESHIP "NORTH DAKOTA"; 20,000 Tons; 25,000 I.H.P.; Speed, 21 Knots.

Armour Protection.—Complete Krupp Steel Belt, 8 feet wide, 11 inches thick; Upper Belt, 7 feet 3 inches wide, 10 inches thick; Central Battery, 5 inches thick; Turrets, 8 inches; Bases, 12 inches; Conning Tower, 12 inches.

Armament.—Ten 45-calibre 12-inch guns in pairs in five turrets, all on centre line, placed as follows: two on forecastle, the second firing over the first; two aft on main deck on the same level; one amidships, firing over the two after turrets; fourteen 50-calibre 5-inch Q.F. guns, ten in central battery and four in sponsoned casements, two forward and two aft; ten small Q.F. and machine guns, with two submerged torpedo tubes for 21-inch torpedoes.

Copyright, Enrique Muller, New York.]

LIBRARY
UNIVERSITY OF ILLINOIS
URBANA

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. LIII. DECEMBER, 1909. No. 382.

[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

I. OFFICERS JOINED.

Lieutenant V. M. C. Napier, R.H.A.
Captain B. N. Brooke, Grenadier Guards.
Lieutenant G. C. Codrington, R.N.
Captain T. T. Behrens, R.E.
Captain A. H. Hooper, Middlesex Regiment.
Lieutenant L. H. Phillips, Worcestershire Regiment.
Lieutenant R. J. Faulkener, R.N.
Lieutenant H. Harington, West Yorkshire Regiment.
Captain T. J. Reynolds, Royal Irish Regiment.
Colonel F. S. Derham, late East Lancashire Regiment.
Captain D. Wise, Royal Munster Fusiliers.
Major A. W. F. Baird, D.S.O., Gordon Highlanders.
Lieutenant F. J. Bear, 3rd Bn. London Regiment.
Lieutenant D. H. Thorburn, Scottish Rifles.
Lieutenant C. F. Milsom, A.S.C.
Lieutenant D. W. Payne, R.G.A.
Major-General A. D. Anderson.
Sub-Lieutenant O. H. Stoehr, R.N.
Major L. J. Bols, D.S.O., Devonshire Regiment.
Lieutenant E. L. D. Boyle, R.N.
Commander A. C. Dunn, R.N.
Lieut.-Colonel G. L. Chambers, late Madras Volunteers.
Captain C. R. Hay, Middlesex Regiment.
Lieutenant T. R. M. Carlisle, R.F.A.
Captain S. J. P. Scobell, Norfolk Regiment.
Captain St. J. E. Montagu, Northumberland Fusiliers.
Captain B. P. Stafford, East Surrey Regiment.
Second-Lieutenant C. T. Atkinson, Oxford University O.T.C.
Captain A. P. Birchall, Royal Fusiliers.
Captain W. E. Peal, R.F.A. (T.F.)

II. GOLD MEDAL ESSAY. 1909.

The following Essays have been received:—

"The Framework of an Army."
"Tuchtigkeit vor Blossen Ziffern."

The Council regrets that so few Essays have been sent in. In the month of July it is proposed to invite members to submit suggestions for subjects for the Military Essay, 1911. The naval subject for the 1910 Gold Medal Essay will be announced in the January number of the JOURNAL.

III. ADDITIONS TO THE MUSEUM.

(6040) Sash worn by General Robert E. Lee, born in 1807, son of General Harry Lee, of Washington's Army. Robert E. Lee, at 56 years of age, took command of the Confederate Army of Northern Virginia, 1st June, 1862, between which date and 9th April, 1865, he directed seven campaigns. He was made Commander-in-Chief of all the Confederate forces on 9th April, 1865, and died in 1870.

Given by General E. H. Clive.

(6041) Decorations and Medals of the late Surgeon-General Sir James Mouat, V.C., K.C.B., consisting of the

Victoria Cross,
Badge and Pendant of the Order of the Bath,
Queen Victoria's Jubilee Medal.
Crimean Medal (3 clasps),
New Zealand Medal,
French Legion of Honour,
Turkish Crimean Medal,

Surgeon James Mouat, 6th Dragoons, was awarded the Victoria Cross for having on the 26th of October, 1854, voluntarily proceeded to the assistance of Lieut.-Colonel Morris, C.B., 17th Lancers, who was lying dangerously wounded in an exposed situation after the retreat of the Light Cavalry at the Battle of Balaclava, and for having dressed that officer's wounds in the presence and under the heavy fire of the enemy, so saving his life.

Bequeathed by Lady Mouat.

(6042) A Nordenfeldt Gun, being the first Machine Gun used on land. The 12th Battalion London Regiment, then known as the Central London Rangers, have the distinction of being the first Corps—either Regular or Auxiliary—in any Army to demonstrate the value of Machine Guns. Two Nordenfeldt Guns, one of which is the one alluded to, became the property of the Corps in the year 1882, but, owing to difficulties with the authorities, their official recognition did not take place for some time, and for seven or eight years afterwards the Battalion remained the only one so equipped.

Given by the Officers, 12th Bn. London Regiment.

OUR FOOD SUPPLIES.

Our Dependence on Overseas Food: The Emergency Means Available to us to Amplify our Supplies on Outbreak of War, and thus Prevent Food Panic, with its Danger to the State.

By DOUGLAS OWEN, Esq.

On Wednesday, 10th November, 1909.
Admiral of the Fleet Sir G. H. U. Noel, K.C.B., K.C.M.G.,
in the Chair.

THE extent to which we have come to be dependent on the ocean vessel for our daily food is so well known that it is needless to re-state the facts. For the purpose of this paper I must, however, very briefly do so. And I will confine my remarks to wheat, by which I mean wheat and flour, because although we are very largely dependent on overseas supplies for nearly everything we eat or drink, bread is a necessity for us in a sense which is more true than in the case of anything else, and so long as we can obtain a sufficiency of wheat, at any rate we cannot starve. And without such a sufficiency, broadly stated, starvation will stare us in the face. Of every five loaves we eat, four are sold to us over the ship's rail. This is the case to-day, but the same processes which have gradually brought us to this pass are always silently and irresistibly working; and just as, in the past, two loaves out of five grew first to three out of five and then to four out of five, so in the future we must expect that the present four loaves out of five will become nine loaves out of ten. And this is by no means the whole of the evil, or of the danger, for when we produced our wheat at home, our reserves on the land, in granary or in stack, were always with us. Now, we live from hand to mouth, under the regularity of steamer imports. We order what we want, to arrive at the date we expect to want it, and steadily the necessity for reserves grows smaller. A corn-trade expert stated to the Royal Commission on Food Supplies that probably in a decade we shall do without stocks altogether in the ports, beyond perhaps the stock for a single week. So that, highly dangerous, in the event of war, as is our position to-day, the growth of population and the increasing tendency to live from hand to mouth are two strong reasons why, in the future, it should become still worse. And the same processes are already manifesting themselves in Germany and must manifest themselves in any State which becomes less and less agricultural and more and more industrial. For while the density of an agricultural population must be limited to the acreage, the only limits to an industrial population are those imposed by its ability to sell what it produces, and the cheaper the food of the workers the lower the cost at which they can produce and the greater their advantage in the competition for foreign markets. Cheap food, then, being an industrial necessity, if it can be imported, whether duty paid or not, at less cost than it can be grown, it will be imported and not grown. This is the economic law, but without going into economics the broad fact is that the cheaper wheat must oust the dearer, and live-stock, roots and hay or beetroot (on the Continent) will occupy the farmer in its place. And thus it is that our wheat-acreage to-day is less than half what it was thirty years ago, and this in the face of a huge increase in the population. Apparently it would be still less were it not that straw, like hay, which is too bulky to import, has a market of its own. But our population, which was only 17 million a century ago, has grown to 45 million to-day, and seems destined still to be doubled or quadrupled, for there can be no over-population of an industrial state which has a sufficient foreign market for its products. And if this be so, then our four imported loaves out of five must grow to nine out of ten or ninety-five out of a hundred. But more than sufficient for us now is the fact that to-day for four-fifths of our daily bread we are dependent on the sea—a fact pregnant with the gravest possibilities in the event of maritime hostilities.

The Report of the Royal Commission.

It was the gravity of this outlook and the popular anxiety arising out of it that called quite recently for the appointment of a Royal Commission. The instructions to its carefully selected and very able members were to enquire into our various food imports and the country's available supplies at any given period, and to advise as to any measures, over and above a strong fleet, by which we might better secure supplies and avoid violent market fluctuations—in other words, panic prices. Now the labours of the Commission produced very valuable though certainly not very reassuring information; but the result was practically a negative report on the part of His Majesty's Commissioners. The Report, in fact, so far as any recommendation is concerned leaves us where we were. For really the backbone of the whole enquiry was the question of establishing national reserve supplies by means of granaries in some form or another, and as regards all such storage schemes the Commission—that is, the majority of the members—came to the conclusion that the disadvantages of the proposals were greater than any benefit they were likely to produce. All that the Commission was able to recommend was a scheme of national insurance or indemnity against the risk of capture, a risk justly considered likely to result in insurance premiums which might greatly enhance the price of food and therefore tend to panic prices. They recommended the appointment of a small expert committee to consider such a scheme. A Treasury Committee was appointed accordingly; only, however, with a result which may be summarised thus:—That while the Committee generally approved the principle itself of national indemnity, the expert witnesses were so hopelessly divergent as to the basis of a scheme that the Committee found themselves unable to make any recommendation at all. So that, notwithstanding the ability and desire of the members of the two committees, we are to-day just in the position in which we were before the Royal Commission was appointed. Except, that is, that the evidence of the various expert witnesses and, I think I may say, the general substance and tenour of the Report, demonstrate to the hilt that the grave apprehensions which gave rise to the appointment of the Commission were fully justified.

Does the Report Exhaust the Subject?

The question that I wish to submit for consideration is whether the Report of the Food Supply Commission does actually exhaust the subject; whether there are not, in fact, means of securing or increasing food supplies and of greatly reducing the risk of panic, to which means no reference is found in the Report at all? And, though it may be deemed presumptuous to suggest it, I think that such do exist. Before indicating them, however, I should like to call to memory the facts and their dangers, and I will do so by referring to the Report itself.

Food Shortage and Panic Prices.

Now, in the opinion of the Food Commission the available supplies are not likely to fall below 6½ to 7 weeks supply at the most unfavourable season of the year. But what would be a seven weeks' supply in ordinary conditions would certainly not be a seven weeks' supply in the face of a universal fear of shortage and panic prices, while a sudden stoppage of labour and failure of wages would greatly increase the demands on bread. There would consequently be a scramble for flour, the average householder ordering in a sack or two at almost any price, for bread is only a part, and this the cheapest part, of our daily food. Meat, eggs, cheese, sugar, poultry, and canned and preserved provisions of all sorts enter very largely into our dietary, and they are all more costly than wheat. The same cause which would send up the price of bread would greatly enhance the price of the more expensive foods, with the inevitable result of a greatly increased demand for bread, the food the cheapest and most indispensable. So that, as I submit, seven weeks' supply for ordinary conditions would be nothing like seven weeks' supply in panic conditions. The supplies would simply melt before the demand. A reported capture or two would run up the insurance premiums, and this and the fear of scarcity, and possibly the operations of speculators, would rush up prices to a point altogether beyond the reach of the working classes. The Royal Commission do not deny this. "From the nature of the case," they say, "it is almost impossible to form any reliable estimate as to its probable extent"—that is, the extent of what the Report terms a "psychological rise." Of course, nobody knows, nobody can say. The Report admits, however, that "it may be very serious." The signatories of the Minority Report recognise "the great probability, if not, indeed, the certainty" of such a rise. To leave it out of account, they declare, "would involve a very grave responsibility which we at least could not consent to take upon ourselves." Mr. Broomhall, the widely-known editor of the "Corn Trade Year Book," declared that in his opinion, as the result of the scramble, "there would be nothing left after a day or two for the working classes." This, let us hope, is a pessimistic view; but it is by no means to be ignored. The danger seems indeed to lie rather in high prices—prices beyond the reach of the poor—than in actual shortage. But it is the *fear* of actual shortage, however erroneous, which will make the high prices. Professor Holland, in his evidence, uttered the warning that it is the unexpected that happens, and that a shortage of supplies brought about by even a temporary reverse "would be a calamity so far reaching in its consequences that the risk of it must not be run if provision against its occurrence is reasonably possible." It is, in fact, difficult to estimate and impossible to over-estimate the national distress and consequently the national danger likely to result from a food panic arising at the very moment when we find ourselves plunged into war. And if the price of wheat should advance, as there is the gravest fear that, under the existing conditions, it would advance, to a point beyond the purchasing power of the workers, there would be for them an actual food shortage. Food Commission witnesses expressed the opinion that wheat might go up to 100s. or 200s. a quarter, though they admitted that this was but guesswork. Millions would suddenly find themselves face to face with starvation, and the Government's ability to carry on the war might be most prejudicially affected in consequence. The Report of the Food Commission lays stress upon this point. The Commissioners recognise the possibilities that a food panic might have a very serious effect in hampering Government action in time of war, and say so. I have no desire to paint the possibilities worse than they may be, and I think that those at any rate who have studied the evidence given before the Food Supply Commission, will admit that I have not done so. But what we have got to remember is, that it is the *fear* of a food shortage which will produce panic. People generally may trust in the ability of the Navy to protect our food supplies, but, while so confiding, they will take no risks. They will, we may depend, rush to make themselves safe, and safe for some weeks to come. And they will buy all the flour they need or can get in order to do so. This rush of millions to get in reserve supplies—together, possibly, with emergency purchases by the naval and military authorities—will create a drain upon the market and send up prices to a point beyond the purchasing power of multitudes, with the result that, so far, at any rate, as the workers are concerned, there will be created a shortage, artificial perhaps, but very real. The effect may conceivably be, indeed, to clear the market actually. And I believe nothing will prevent such a terrible scramble for flour except a well assured and general confidence that special and effective measures will be adopted not only to secure our supplies but to make them abundant. I desire to suggest means by which this, in my opinion, can be done.

The Destination of the European Imports.

Now, first, I wish to invite your attention to the European imports of wheat. Of these we, the United Kingdom, took in 1908, 1907, and 1906, 48 per cent., 45 per cent., and 44 per cent. respectively, average, say, 46 per cent., leaving 52 per cent., 55 per cent., and 56 per cent.—average, say, 54 per cent.—for foreign countries. So that, consequently, rather more than half of the European wheat imports go to our neighbours. An expert witness stated to the Food Commission, five years ago, that, to the surprise of the trade, the Continental imports, then, stood in the relation of seven as compared with five of our own. If I were to proceed on this statement my argument would be much strengthened; but my own independent and reliable source of information, on more recent data, makes the proportion 54 per cent. to the Continent—or, more correctly, to Europe excluding the United Kingdom—and 46 per cent. to the United Kingdom. Of the Continental 54 per cent., 57 per cent. goes to Germany, Belgium and Holland, and, to some small extent, Sweden. During the last three years, the average to these last four States—Germany, Belgium, Holland and Sweden—collectively has been no less than 31 per cent. of the total European imports, United Kingdom included. Let me repeat that of the total European imports on the three years' average: the United Kingdom takes 46 per cent., and our European neighbours 54 per cent. Of this 54 per cent. to the Continent, 57 per cent., or 31 per cent. of the whole European import, has to pass our shores to get to its foreign destination, which destination is almost entirely Germany, Belgium and Holland. The Belgian and Dutch ports are, however, very largely *entrepôts* for the continental hinterland, more particularly German. On the average of 1908-7-6 the German, Belgian and Dutch imports collectively equal 65 per cent. of the imports by the United Kingdom, and I repeat that this vast quantity of corn passes our coasts to get to its destination. That is to say, for every two sacks of corn that we import, one sack, roughly, passes our shores to go elsewhere. I cannot exactly allocate it to its ports of discharge, but so far as Germany is concerned I understand, on expert authority, that about five-sixths of her very considerable imports reach her by way of Antwerp and the Dutch ports. From which, incidentally, we may infer that in the event of Germany being at war with a maritime Power her overseas food supplies would, with very little disturbance, continue to reach her through the Belgian and Dutch ports in neutral ships. If, for example, she should unfortunately be at war with this country she would no doubt actually rely, perhaps indeed largely rely, on British ships (so far as they might escape her capture) to supply the Dutch and Belgian ports, where she would be able to do her marketing with little inconvenience. I mention this, however, merely by way of parenthesis. Let us return to the fact that 54 per cent. of the European imports go at the present time to the Continent and Mediterranean, and that 31 per cent. pass our shores, nearly all of it on the way to the ports of Germany, Belgium and Holland.

Starvation at Home and Food Passing our Shores.

So that in the melancholy event of our being suddenly plunged into war, at the very time that a panic may be prevailing with us through fear of a food shortage, large quantities of food will be passing our very doors on the way to Germany, Belgium and Holland, and largely in British ships. In addition, wheat which will not pass our shores will, to a less extent, be bound to France and Spain and to the Mediterranean, also largely in British ships and also in part from ports of our own dominions. And, according to purely modern usage, these vast supplies of food bound to neutral ports will not be subject to our interference unless so far as they may be in enemy ships, and, according to modern usage, not even then if on the outbreak of war they happen to be on the way from a port of our dominions. (Instances of the modern usage referred to are separately printed.)

For in the Crimean War we set a new example. We issued a proclamation that the enemy's ships in our ports, and in ports of our dominions, should (contraband excepted) be free to complete their discharge or loading and proceed in safety to their destination, and that any of the enemy's ships already on the way to such British ports should be similarly exempt from molestation. Whether there were, in fact, any Russian vessels affected by this magnanimous proclamation of ours, or how many there may have been, does not now greatly matter. If, however, our magnanimity did not at the time cost us much, it did set an example which has been followed practically in every war since then, and which, if we again endorse it, may have the most serious consequences for ourselves; for if, when next we are at war, we follow the precedent for which we are responsible, and which others have extended, we shall, though threatened with a calamitous food panic, allow the enemy's ships then in our British food ports to load up with our wheat, to be by them carried home to their own ports, while, on America's precedent in her late war, the enemy's ships previously so laden, and on the way from our ports, will be similarly exempt from our interference. I will come back to this presently when I have disposed of my first proposition. And my first proposition is this: that immediately on the outbreak of war we should, if found advisable, resort to the Right of Angary or the Right of Pre-emption, and seize and bring in every wheat-laden vessel within reach, making fair payment for the corn, and compensating the shipowners. And if it be replied to this proposition that the Right of Angary will not be available unless we are actually starving, or that the Right of Pre-emption can only be put in force if the food supplies be quasi-contraband goods bound to an enemy's port, then I will abandon Angary and Pre-emption as an argument and substitute for these ancient terms the more modern one of Requisition or Commandeer, or use no term at all. I will take my stand on modern exigencies and not rely on ancient law or precedent. In the ancient days, when commerce was centred in the Mediterranean, a prince in bad need of corn seems to have considered it quite within his rights, if it was in his power, to seize any that he could find afloat, and, probably, he paid for it or not, according to circumstances. Similarly it was for long the admitted right or, at any rate, the common usage for a prince, on going to war, to seize any vessels, under whatever flag, chancing to be in the national harbours, and press them into the service of the State. And we don't need to go back to ancient times, for much more recently we had a striking illustration of a similar right or similar exercise of power. It was in the Franco-Prussian War, when the Prussians seized and appropriated to their own use a very large quantity of Austrian and Swiss railway rolling stock. More than that, they deliberately sank in the lower Seine, to block the channel against French gunboats, eleven neutral merchant vessels, six of them British colliers. Eventually the Prussian Government paid us for them, on our own assessment of the value, though without admitting—indeed repudiating—any liability at all. In the conduct of this war, the Prussians, in fact, "requisitioned"—that was their word—property which the Right of Angary or of Pre-emption, strictly considered, might or might not have entitled them to appropriate. They took it because, being at war, they wanted it, and they relied on the fact as their all-sufficient justification. *Salus populi suprema lex.* And I submit that if on the outbreak of war we should find ourselves threatened with the dire calamity of a food shortage or a food panic, both the fact and the precedents would justify us in bringing in and paying for any shipborne food within our reach. The justification would, of course, depend on the reality and urgency of the emergency, and the mere fear of a possible shortage would not suffice. In 1794, for example, when we brought in American vessels carrying corn to France, whom we were hoping to starve into submission, we urged, as a second reason in justification, that we were ourselves short of food and therefore warranted in our action. As a fact, however, it was later shown that we could have secured ample supplies by offering a bounty on corn, which, indeed, we had subsequently done. Possibly the bounty system may again be resorted to with advantage, but in these days of telegraphic and universal knowledge as regards the prices prevailing everywhere, corn will always—sooner or later—be drawn to the best market, bounty or no bounty. Under modern conditions the bounty question is by no means free from difficulty. But my first proposition, if the emergency should justify it, is, that so long as the emergency lasted, and no longer, we should seize any neutral wheat passing our shores, giving notice of our intention and of its justification, and declaring our willingness to pay a fair price for the food and to compensate the carriers. And here let me quote the pregnant words of Bismarck, speaking in 1886 on the Polish question. This, according to the *Times,* is what he said:—

"Neither in peace nor in war could a nation, which is fighting for its existence, follow ordinary rules of conduct. Emergency rights could be asserted by a State when its very existence was imperilled."

Just so. *Salus populi suprema lex.* And we may, I think, safely say that Bismarck would have endorsed, as a corollary to his far-reaching pronouncement, such words as these:—"And of the imminence and degree of the peril to be met, the State endangered must be its own judge."

Supplies in Enemy Ships Diverted from us by Modern Usages of our own Creation.

If we proceed as I have suggested, we shall not want for food; but having raised the point I am content to leave it and pass on, for in any event we have other recourses available, both of great value and apparently well within our rights. Let us consider them; and first let us take the case of wheat shipped under the enemy's flag at one of our Canadian, Australasian or Indian ports, and the question of days of grace and of immunity. The vessels carrying such wheat will, of course, by the law of nations, be liable to our capture; but if we follow the usage now generally adopted on the outbreak of war, we shall, on the precedent we ourselves established in the Crimean War, issue a proclamation allowing the vessels to complete their loading and proceed in safety, and on the precedent set by America in her war with Spain, granting the like immunity to such vessels already on their voyage from a British to an enemy or any other port. But in our national need for food supplies, to issue such a proclamation would be a quixotic absurdity—doubly absurd in the case of an industrial enemy largely engaged in ocean transport and, like ourselves, in urgent need of food supplies.

SUPPLIES IN BRITISH VESSELS SIMILARLY DIVERTED.

Next comes the question of food supplies in British vessels loading for, or on the way, when war breaks out, to an enemy port. There may be—I think I may say, there are sure to be—many such vessels. Strictly, they cannot deliver their cargoes to the enemy, as this would constitute a trading with the enemy: their voyage should be abandoned. But in modern times the strictness of the old law seems to have been relaxed in consonance with days of grace and immunity proclamations under which the enemy permits or invites such vessels to complete their voyages and guarantees their safety. I submit, then, that here also we should take our stand on the well-known law and refuse to our ships the permission to take advantage of the enemy's immunities. British vessels loading food supplies at or carrying food supplies from a British or neutral port to an enemy destination, should be required to abandon their voyage and land their cargo at a British port.

SUPPLIES IN BRITISH VESSELS BOUND TO NEUTRAL DESTINATIONS.

There remains the case of British vessels loading food supplies for or on the way to a neutral port, and, as British vessels, liable, of course, to capture. These should in like manner be ordered to abandon their voyage and land their cargo at a British port; all the more so as many of such cargoes would be landed at Dutch or Belgian ports, which are largely the stepping-stones for the cities of the hinterlands. Germany, for example, as already observed, obtains a very large proportion of her overseas food supplies through these neutral ports, and in the event of her being at war with a maritime State would doubtless rely on them almost entirely.

By declining to give immunity to the enemy's vessels carrying food supplies from or loading at our ports, by requiring our own vessels carrying food supplies to the enemy to deliver their cargoes at a British port, and similarly by requiring our own vessels carrying food supplies to neutral ports to deliver their cargoes at a British port, we should, on the outbreak of war, effect a large diversion of food supplies to the United Kingdom. For let us remember that British ships are largely the world's food-carriers.

By cabled instructions to coaling ports and ports of call, and by telling off fast vessels, not necessarily warships, to intercept British wheat-carrying vessels in or approaching the Channel, it would be practicable to divert nearly every British vessel from her intended neutral destination, and, more especially as they will be liable to capture, we shall be fully within our national rights in issuing in the national interest such orders to British vessels as may be deemed advisable.

Supplies Available at Ports of our Dominions.

Finally, there remains our right, immediately on the outbreak of war, to lay an embargo on all food supplies at the ports of our dominions. Neutral or British vessels loading food supplies, at or about to sail with food supplies from such ports, should be required to enter into guarantees to deliver their cargo at a United Kingdom port, or, in the alternative, to unship at the port of loading. And this embargo or restriction should be kept in force during the progress of hostilities or for such shorter period as might be needed. This, indeed, is very much what we did in 1757, when at war with France. We prohibited the export of corn, beef, pork, etc., from our American colonies to any other than a British port, with the requirement of guarantees on the part of exporters, to prevent evasions.

The Propositions Summarised.

Let me summarise my propositions and take first the more delicate case, that of the—

Neutral Vessels.—I propose that in case of urgent need we should be prepared to intercept and bring in any neutral vessels carrying food supplies, paying such compensation as the facts may warrant. I recognise that this would be a strong course to adopt, but national emergencies justify special measures, and at all events the proclamation of our intention to pay compensation would deprive our action of a hostile character and make it merely a question of money payment. I have dealt collectively with the case of neutral vessels carrying wheat to neutral ports, and with the case of neutral vessels carrying wheat to enemy ports, but a distinction can, I think, legitimately be drawn between the two. For, granting that to bring in and pay for cargoes bound in neutral ships to neutral ports might be difficult to justify, the case of neutral vessels carrying wheat to the enemy stands on a different footing. I recognise, however, the delicacy of the subject as a whole, and having called attention to it, I am content to leave it. My only object in mentioning it has been to place on record the fact of its existence. I may say that personally I fail to see how, so long as England has its present geographical position, together with a predominating sea-power, our need can ever be so urgent. But with the conditions as they are, we must be prepared for the emergency of a terrible food panic. To insure against it the following are my propositions:—

I. *Enemy Vessels*.—No British proclamation of days of grace or voyage immunity to be allowed to cover food supplies in enemy ships loading at or on the way from any port of the British Empire, whether to the enemy or to neutrals.

II. *British Vessels to Enemy Ports*.—No enemy proclamation of days of grace or voyage immunity to be allowed to enable British vessels to complete a voyage with food supplies to the enemy. All British vessels so engaged on the outbreak of war to be required to abandon their voyage and come in to a port of the United Kingdom.

III. *British Vessels to Neutral Ports.*—All British vessels carrying food supplies to neutral ports on the outbreak of war to be similarly required to end their voyage at a United Kingdom port.

IV. Finally, *The Control of Food-shipments from British Ports.*—That on the outbreak of war no vessel, whether British or neutral, be allowed to carry food supplies from any port in the British dominions to other than a United Kingdom port. I state this separately, but III. and IV. practically come to the same thing, or nearly so.

Now, these emergency rights would be exercised on the outbreak of war and would be continued only until the evidence of our martime supremacy and the security of our food supplies had been established to the popular conviction. To the possible objection that their exercise might be inconsistent with treaties of commerce, it may be replied that no such consideration should be allowed to come between us and measures necessary for the national safety. As to the practical results of the measures, conclusions can only be drawn generally from the facts. First of all, the great main fact, that of the vast supplies of wheat which come to Europe, 54 per cent. go to consumers other than British, and that no less than 31 per cent. of the total European imports actually pass our shores on the way to such consumers. And I take it that more than half, perhaps much more than half, of this 31 per cent. will be in British vessels, the remainder being in enemy vessels, exposed to our capture, and neutral vessels. And I submit that, even without bringing in for preemption the wheat on neutral vessels bound to enemy or neutral ports, the measures which I propose would not only provide us with ample food supplies, but that the proclamation of our intention to resort to such measures immediately on the outbreak of war would of itself create a public confidence which would remove or greatly lessen the fear of food panic, itself a danger to the State.

The artificial and highly-precarious position in which we stand to-day calls for new and special protective measures. The Report of the Royal Commission admits this in effect, but offers no solution. At any rate, its sole recommendation, that of a scheme of national insurance or indemnity, has come to nought. Of the proposals which I have ventured to submit, I believe no mention was made by any of the witnesses before the Commission, myself among them. The proposals have, in fact, so far as I know, never been discussed at all; but inasmuch as they seem to me to be of no small importance, I have been bold enough, by the kind permission of our Council, to place them on record and to submit them to the ordeal of a criticism so weighty and so expert as your own.

T. E. HOLLAND, K.C., D.C.L., LL.D., Professor of International Law and Diplomacy, University of Oxford, etc. :—I have no intention of occupying your time for anything like the allotted ten minutes, but I should like to say a few words as, perhaps, the only member of the Royal Commission who is here present, except the Chairman. I thought the Report of the Royal Commission, although I signed it, too optimistic by a great deal. I therefore signed also a separate Report expressing my own wish that many further expedients should be tried than those mentioned in the Report of the Royal Commission. I thought that accidents might occur. That was admitted, but it was supposed by the majority of the Commission that we should have so strong a fleet that an accident would be almost miraculous. They never defined what they meant by a "strong fleet," and the Committee the other day did not define what they meant by an "adequate fleet." Of course, it is a thing that cannot be precisely defined, but you ought to give some indication of what you mean. Do we mean a two-Power standard? If so, we seem now to have thrown up the two-Power standard. I feel very nervous indeed about the adequacy of the fleet to prevent accidents to our food supplies. And even if you prevent lamentable accidents, there is always that danger which has been so much dwelt upon of scares—scares as to stoppage of supplies, and also scares sending up the rate of insurance. I believe the danger is very considerable indeed, and am therefore extremely obliged to the lecturer for keeping the question before the attention of the public. It is necessary it should be so kept before the public. I rather supposed that what he was going to bring before us again to-day was what he laid stress upon in his evidence before the Royal Commission, if I remember it rightly, namely, the propriety of some national guarantee, whether by way of insurance, or by way of indemnity, when cases actually occurred. I need hardly say how much either of those measures, if they were practicable (and the committee has not convinced me to the contrary), would encourage shipowners to go to sea in greater numbers, and therefore increase our chance of getting larger supplies into the country. However, that is not the point he has brought before us to-day. He has brought before us some suggestions which I confess are of a somewhat startling character, and they rather come home to me because I "profess" International Law, and therefore feel some scruples when well-known principles of International Law are touched. I think that very likely under the stress of a great panic as to the supply of food, we should have to do something very strong. One of the suggestions laid before us to-day—a good many of them are so new that I do not like to pronounce upon them *seriatim* unless I have them all before me in print—one of the suggestions seems to me, if I may say so, quite inadmissible, namely, that we should sally forth into the Channel and take hold of neutral vessels on their way to neutral ports or anywhere else. What would be the feelings of the United States, for instance, to take one country, if, the United States being neutral in a European war in which we were engaged, we sallied forth from our ports with ships of war, brought in their ships and took away their cargoes of wheat? I am afraid that such an affront to a friendly flag, although full compensation were paid for the property taken, would hardly be stood; it would bring about such complications that the latter end would be worse than the beginning. However, I must repeat my hearty thanks to the lecturer for the new points he has laid before us, because I do not think too many suggestions can possibly be made for avoiding the great danger of scarcity which I am sure we shall run should war break out.

Commander W. F. Caborne, C.B., R.N.R. :—It seems to me that the general trend of the lecture supports the position that some of us have taken up in this Institution, namely, that in time of war we must do the best we possibly can for our own country and not regard too strictly, or in some cases even at all, regulations made in time of peace. When war breaks out, sailors and soldiers will have to come to the front, and, with all due deference to those who express a contrary opinion, I am under the impression that the upholders of the sanctity and inviolability of so-called International Law will have to take a back seat. With regard to Germany receiving supplies through Belgian and Dutch ports in British bottoms, that could easily be prevented by an Order-in-Council forbidding such ships to carry food-stuffs to those places during the continuance of hostilities between ourselves and the first-named country. Cargoes thus diverted would find a ready sale in the United Kingdom, and the liability of shipowners to shippers would, no doubt, be governed by the clause in the bills of lading and charter-parties, relating to the "restraint of Princes, Rulers, or Peoples." In the years gone past, our principal probable naval enemy has been France; but, owing to our present good relations with that country, in the event of war with Germany, provisions and other goods would pass uninterruptedly so long as we held command of the English Channel. For my own part, I do not believe in National Insurance, State Indemnity, nor any similar nostrums; but I pin my faith to our only true insurance policy, which is the maintenance of a powerful and efficient Navy, such as I venture to think we possess at the present moment.

Commander the Right Hon. Lord Ellenborough, R.N. :—I think that we all owe thanks to the lecturer for bringing before us some new suggestions connected with the important question of our food supply in time of war. Unfortunately the people of this country never appear to be able to think of more than one thing at a time. At present they are so absorbed in the Budget that it is difficult for them to find leisure to consider the still more important question as to how they will be able to get their daily bread in time of war, although those who go to church and chapel pray for it every Sunday. If our food supply is interrupted it is not the poor alone who will suffer, it is the weakest who will starve first. Law and order will disappear. Bank balances, investments, jewels, furniture, and motor cars are not edible, and force and violence will be made use of to obtain food for the strongest. The rich will starve as well as the poor. I do not think there will be any difference between the one and the other. Three years ago I read the evidence and conclusions of the Royal Commission on "Food Supply in Time of War," of which our Chairman was a member. Like many other blue books, the evidence contained in it was more important than its conclusions. I disagree with the report on one point, although I daresay I may be in a minority, for I think that a fortnight's or a month's food in Government stores should always be kept for the purpose of allaying panic, and giving us time to recover from what may merely be a temporary pressure. As for the idea of giving indemnities to owners of captured ships, it would tend to make shipowners indifferent as to whether their ships were captured or not, as was frequently the case during the Russo-Japanese War. Besides, no amount of indemnities can break through a well-conducted blockade. The lecturer suggests as a remedy a considerable interference with the rights of neutrals, and the instant seizure of all enemies' ships in our Dominions, instead of giving days of grace as we did in the

Crimean War. The days of grace granted by us at the outbreak of the Crimean War were at that time mere diplomatic formality, and did not appreciably affect trade. The Baltic had been closed by ice, and the Bosphorus by the Turks for some months before war became inevitable, so that I fancy that scarcely any ships took advantage of them. It did not affect trade in any appreciable degree. History shows that on many occasions ships have been seized first, and that war was declared afterwards The same will happen again whenever a nation thinks that the risk is great enough to justify such a proceeding. As a rule, I think that neutrals should be interfered with as little as possible. An over-zealous officer in charge of a destroyer may do his country untold mischief by seizing or destroying a neutral ship at an inopportune moment, even if acting in strict accordance with the rules laid down by the London Conference. At the same time, if at war with a neighbour, we should have to insist on a great many more rights than are at present conceded to belligerents by International Conferences. For instance, if the North Sea was the theatre of war, we could never allow the free use of it to neutrals. If we did we should probably lose the command of it. We should be obliged to place all neutral vessels in that sea under regulations similar to those under which our own ships would go from port to port. A revival of some form of *Mare Clausum* would be absolutely necessary. Foreign countries might object, but their remonstrances or threats ought not to affect us much, for we could point out to them that nothing worse than starvation could possibly happen to us in any case, and therefore their threats would pass us by. Of course, we ought always to offer to pay neutrals for any vessels that we take unlawfully; that we should do at once. Neutrals are more likely to feel irritated with us if we break rules that we have agreed to, than if there were none to break. For these and other reasons I hope that the Prize Court rules of the London Conference will never be ratified, as I think that they are more likely to cause additional trouble between belligerents and neutrals than to pour oil on troubled water. At the same time we should concede to neutrals, all points not vital to our safety, so as to avoid raising additional enemies. Maritime wars cannot be localised to the same extent as land wars. Between 1812 and 1814, neutrality became impossible, and all nations found themselves fighting on one side or another. There is another point that has, I believe, not been sufficiently considered, that is the arming of our merchant ships. Most of them are capable of being fitted with a light battery to keep off torpedo boats. I suggest that obsolete guns recently discarded from our Navy might be usefully retained in store for that purpose. In bygone days our large Indiamen frequently beat off the attacks of smaller vessels. On one occasion a fleet of them beat off battleships. As we live in the 20th century, we must also be on our guard against weapons unknown in former days, which are outside the scope of naval warfare. Not very long ago a single individual attempted to corner wheat in America, and very nearly succeeded in doing so. At the present moment, an American Beef Trust has nearly had its own way in the States, and is now about to corner all Argentine exports. Argentina supplies about 42 per cent. of our imported food. An astute enemy, with Government funds, instead of only private wealth at his disposal, may well attempt to do the same, with probably greater chances of success. Our Government should be on its guard against this. This part of our defence must be left to business men of experience, backed by Government funds. Men like the late Lord Goschen and Lord Beaconsfield would probably have been able to beat any enemy at this game. I hope that the points made by the lecturer will be duly considered by the Naval Intelligence Department, the War College, and the Foreign Office, and ultimately by the Committee for Imperial Defence.

Mr. HARRY QUELCH, Editor of *Justice*:—I presumed that in a lecture before the United Service Institution the question of our food supply in time of war would be dealt with chiefly from the point of view of the Services, from the military point of view and the naval point of view. While I congratulate the lecturer on the address he has given from that standpoint, it does seem to me too much is taken for granted in assuming that we are to accept the present economic position, in the sense that we are always to be dependent, not to a lessening but to an increasing degree, upon foreign sources for our food supply. Surely that is an assumption which the facts of the case do not warrant. As I have said, one can quite understand that the matter should be regarded here more from the naval and military than from the political point of view. But in any discussion of the question, it does seem to me that the object should be to suggest something more than mere protection; that is to say, something more than the mere protection of our foreign food supplies, and to devise means for producing a food supply of our own. As the lecturer has pointed out, the facts of the case in this country are gradually manifesting themselves in all countries, that is to say, with the growth of industry, the growth of food in all countries becomes less and less proportionate, and all countries become more and more dependent upon foreign sources for their supply of food. That being so it is quite clear that the markets for industrial products must gradually diminish, and therefore the attention of politicians and statesmen should be directed in this country rather to developing a food supply of our own than to the mere question of protecting our foreign food supply in time of war. This latter I recognise to be a very important question, but, after all, the other seems to me to be still more important. Lord Ellenborough has said that in case of a war, in spite of all the precautions that might otherwise be taken, the rich would starve as well as the poor. That appears to me to be rather an argument for a state of war, a condition which would induce one to contemplate war with a certain degree of equanimity, because at the present time it is only the poor who starve. Then we should tend to arrive at something like equality, if the rich had to starve as well as the poor, although I imagine that is an apprehension which will not be universally shared. I fancy that, even in a state of war, the rich would be fairly well able to take care of themselves, as they are now; that is to say, unless the anger of the populace in consequence of the mismanagement of the affairs of the State, and of the starvation in which they found themselves, came to be such that the rich had to suffer at their hands. Apart from that, I think the precautions which the rich would be able to take in the way of accumulating stores on the first outbreak of hostilities would be such as to enable them to stave off starvation, and that would be by no means the case with regard to their poorer fellow subjects. With regard to the suggestion made by the lecturer as to the naval and military steps to be taken to protect our foreign supplies of food in time of war, I can see no possible objection to it, even from the point of view of International Law. Because, after all, what is International Law? International Law is only law in so far as it can be enforced. There is a Latin proverb which may be translated: "Amid the clash of arms the laws are silent," and when war is going on practically Martial Law prevails, so far as all parties are concerned who are engaged in the war, and neutral countries could only maintain their rights or protect themselves in so far as they were able to do so by force. So that from the point of view of International Law there seems to be little to be said, except in theory, against the propositions advanced by the lecturer. Dealing with the subject from the other point of view, some little time ago a Conference was held in London, called by the Social Democratic Party, to which I belong, of representatives of Labour and Socialist Organisations all over the country, where this question of food supply was considered. At that Conference certain propositions were adopted, and it seems to me that while, as I said at the outset, the question of the military and naval protection of our food supplies in time of war is the one that immediately concerns such a meeting as this, still the other political economic question is one which is of some interest; and at that Conference the following suggestions were put forward:—1. The establishment of national granaries for the storage of a seven years' reserve wheat supply, such reserve to be accumulated within a period of fourteen days. 2. A complete survey and valuation of all agricultural land and its transfer from private to public ownership, life annuities to owners being given as compensation for compulsory purchase. 3. For the adequate cultivation of the land thus brought under public ownership, the County Councils to be constituted agricultural authorities, having power to cultivate the land direct or impose upon tenants the most approved methods of cultivation. The encouragement of co-operation for the provision of seeds and machinery, a free motor service, municipal markets, the control and ownership of flour milling, and the retail bread supply, the price of wheat to be standardised. I may say in that connection, and in conclusion, that unquestionably the national production of our food supply by the people of this country for themselves is of vastly greater importance in the future than the mere question of the protection of our foreign food supply; and at the present time, while the question of Tariff Reform, of Protection, and similar questions are under discussion, it must be remembered that it is beyond all question that the present railway system, the difficulty of getting produce to market, and so on, operates to a very large extent to discourage the production of the home supply of food.

Major STEWART L. MURRAY, late Gordon Highlanders:—I think we all owe a very great debt of gratitude to the lecturer for the very able and interesting suggestions he has put before us to-day. They are so very new and far-reaching that I do not suppose any of us here would feel very much inclined to attempt to criticise them to-day. They all want a great deal of thinking out before one could offer an opinion on them. But I feel they are very valuable indeed, and all those who have studied the question feel extremely grateful to Mr. Owen for the suggestions he has made. I do not propose for one moment to attempt to criticise them: I would rather like to say one or two words in order to back him up. As regards the Report of the Royal Commission, to which he referred, I do not think we need bother very much about that. It was, of course, a negative Report, but things have moved on since then. I have noticed myself in the last few years a considerable alteration of opinion as regards our food supply in time of war. I can remember—and I am sure there are many others in this room who can remember—that if you discussed the question with anybody, you had to demonstrate first of all that there was a danger, and that a remedy was required. That is, I think, no longer necessary now. Everyone with whom one discusses the matter is of the same opinion as oneself as regards the danger, and everybody practically is of opinion now that a remedy is required. When things get to that stage, it will not be very long before the demand will be made that something shall be done. It is said that it takes about thirty years to get anything done in this country. There are people in this room who have been at this question for twenty odd years; there are some of us who have been at it for a less period—four, five, eight, nine, and ten years—but that period of thirty years is drawing to a close, and I think that in a few years now we may be certain that we shall get something done. All that is necessary is for people like the lecturer to keep pegging away and doing all they can, and before very long we shall find this country will be put into a satisfactory and safe position. I said that as regards the Report of the Royal Commission we need not bother very much about it, because it is what I would call a peace Report and not a war Report. When I say a peace Report I mean a Report which shirks conquerable difficulties, difficulties being unduly impressive in times of peace, and in face of those difficulties their natural instinct is to let the matter slide. But when war comes they treat those difficulties in quite a different way; that is to say, they face them and say they shall be overcome—they can be overcome and shall be overcome. When war comes there is not the slightest doubt that that is how this question will be faced. All the difficulties which the Royal Commission Report considered, and which the National Indemnity Report considered to be sufficient to induce us to leave the matter alone, will be swept aside as if they did not exist. Of that I am perfectly certain. I am also confident that you have only to wait a little longer to see the matter put straight, because it is absolutely necessary if we are to fight a successful war under modern industrial conditions. Consider for a moment what has been happening in other countries during the last few years. Take the Commune in France, take the bread riots in Italy, take the attempted Revolution in Russia, take the recent riots in Spain, take all the outcries in the American ports during the Spanish war, for commerce protection and that kind of thing; take any country you like, and you will see that modern democracy is much too dangerous a force to be let alone. You cannot ignore it too far, and if you do, the most disastrous consequences will follow. I say that in the modern industrial state it is absolutely necessary that we should have some internal organisation for war if we want to keep things quiet at home. We recently had here a debate on the gold reserve of our country, and this works in in connection with this question of commerce protection and food supply. All those things need to be considered together in the light of internal organisation of an industrial state for war. I would like to impress upon you for a moment the importance of that question of internal organisation for war, because I am certain it is our only hope of getting through a great European war without the most tremendous riots in this country. We do not want to see them; we do not want to have hundreds of thousands of people clamouring for peace at any price when we shall want the whole of our national strength and national patriotism to carry us through. I would like to put one concrete case to the lecturer, which, perhaps, he will reply to as to how it will affect us at the beginning of a war? Take any district you like; take Poplar—perhaps Mr. Quelch will tell us something about that. I say the way war will act will be this: that the poorer classes in all the great districts of London, who are dependent on wages of 21s. a week and under, if food rises to famine height (as it will during maritime war), may be able to buy it for the first week by the help of the pawnshop; they would be able to buy it the second week by pawning the remainder of their little goods and chattels; but at the end of the third week they would have nothing left to pawn. Before the end of the third week many will have to go on the rates. At the end of the fourth week they will come on the rates in ever-increasing numbers. I believe that we should have, at the end of the fourth or sixth week, 30 per cent. of our town population on our rates—all those included in Sir Charles Booth's 30 per cent.: the poor and the very poor—and the Poor Law is at present accustomed to dealing with only 2½ per cent. of the population. In case of war it might be able to deal with 7 per cent.—that I had from the Secretary and Chairman of the Associated Guardians of England and Wales; but a change from dealing with 2½ per cent. to dealing with 30 per cent. is such an enormous change that it could not possibly be carried through without great organisation and preparation beforehand. The outline of such a scheme I worked out in conjunction with the Secretary of the Associated Guardians, and put it before both their Executive and Parliamentary Committee, who approved, and sent their Chairman to say that something of the kind was absolutely necessary before the Royal Commission. I gave this scheme as evidence before the Royal Commission, but won't say more about it now, except that I think some such scheme must be considered as supplementary to the proposals of the lecturer. That Poplar case is a concrete case which will concern us directly war breaks out, and food goes up to famine prices. At the end of three weeks we shall have nearly 30 per cent. of our town populations coming on to the Poor Rates for relief, and what are we going to do with them? I will not say anything more; I will leave it at that. That is the concrete case we have to consider of what will absolutely happen to us, and which we shall have to deal with.

Admiral F. A. Close:—I need hardly excuse myself for addressing you, because I was the first man that ever hoisted the danger signal on the question of our food supplies in time of war; and with the assistance of *The Morning Post,* under the heading, "War, Famine, and Surrender," I preached and brought forward the doctrine I advocated until I got it into stronger hands, namely, those of Yerbrugh, the ex-Member for Chester, and the Duke of Sutherland. Then it was placed in the hands of a Royal Commission, which, as usual, did nothing. At those times I used to impress upon my audience this question: What is the use of a powerful Navy going to sea and winning battles of Trafalgar when they leave a starving population behind? The Navy under those circumstances is almost useless unless we have sufficient cruisers. Have we sufficient cruisers at the present time? Lord Charles Beresford says we want eighteen more. In 1888 there was a scare of this description—Admiral Hornby was invited by the merchants of London to go into the City, and tell them what was the danger, and what he recommended as a cure. He thoroughly threshed out the subject; he took up every trade route, and the conclusion he came to was that we required 185 cruisers. Yet at the present moment we have not got 100, and how can we expect under those circumstances to protect our food supply? Nearly all the cruisers we have would be wanted on the outbreak of war to attend on our battle fleet, as they were in the days of Nelson, who was always complaining that he had not enough frigates, and yet in his day, at the time of the battle of Trafalgar, we had 600 cruisers. Even with that number some of our merchant ships were captured. The lecturer has brought forward a new phase of the question, and Professor Holland has said that if we adopted it we should be breaking the laws. But "necessity hath no law." That is an old saw, and I think it will turn out to be true. Do you suppose that if I was in command of a cruiser in the Channel, and I knew that my fellow subjects were starving, and I came across a ship laden with corn, do you think I would care about International Law? No! I would turn her in, on the principle that everything is fair in love and war. Then it is said that if we did so we should be at war with all nations. What does that matter? Better to fight than die of starvation. Were not we at war with all nations before, and did not we come out successfully? Again, let me impress upon you that this question of food supply is really a military question. We in the Navy can pick up our food anywhere, and we have magazines of food for the supply of the Navy, but the Army sits still and does nothing. You do not hear of a military officer coming here to lecture and saying that the Army will be of no use without a commissariat. Not long ago I had a serious conversation with certain notables, whose names I will not mention, and said: "If I had my way, badly as we want *Dreadnoughts,* I would spend these millions on the Army, because it is the weakest part of our armour." Also, I said: "We want eighteen more cruisers, as recommended by Lord Charles Beresford." There was a military officer present and he said: "Admiral, are not you contradicting yourself? Just now you said you would spend the money on the Army, and now you say you would spend it on cruisers." In reply, I say, you military men do not think; you do not look ahead far enough for rocks. Is your Army any good without a commissariat? Is a commissariat any good in this country without food ships, which come here at the rate of 300 or 400 a week? Could these food ships come to us without cruisers to protect them? If you have no cruisers, you will have no provision ships; if you have no provision ships you will have no commissariat; and if you have no commissariat the Army will starve. Therefore, I say, it is more a military question than a naval one, and I should like to see more attention given to it by military officers than is the case at the present time. It is said an army crawls on its stomach. What has been done for their stomachs?

Lieut.-General H. D. HUTCHINSON, C.S.I. :—I should like to say in a very few words that I cordially approve the counsels the lecturer has given us. I entirely agree with him in the vigorous and courageous measures which he advocates. I believe they will appeal to this audience, and I hope, too, to that far larger audience outside the walls of this building who will read his lecture when it is printed in the pages of our JOURNAL. No doubt a Government which acts in the vigorous and determined way which he has advocated, undertakes a great responsibility; but a Government which is not prepared to undertake a great responsibility is not prepared to go to war, and had better keep out of it. War is a very terrible thing, and has many terrible aspects; but probably the most terrible aspect of war is not that which is created by the havoc of shot and shell, but by the fury of a starving and raging population. What would be the advantage of victories at sea if a starving mob were meanwhile wrecking London from one end to the other? Therefore I think that the strong and vigorous methods advocated by the lecturer are right. If in a great struggle, such as we should be engaged in on the occasion contemplated, we were defeated, then our action in the matter of capturing neutral food supplies would not really matter twopence one way or the other; and if we came out "top dog," then we could be as magnanimous and as generous as the circumstances demanded, and we should surely be able to meet every demand made upon us for compensation. I am therefore in favour of the lecturer's proposals.

Captain J. W. OSBORNE, R.N. :—I propose to harrow your feelings for a few moments longer, if you will allow me to do so. The criticisms that I should pass on the lecturer's proposals are that they do not provide you with food at the moment when war breaks out, and that that is the time when it will be most required. You have to catch your ships; you have to telegraph to the exporters; you have to put your vessels into all sorts of new channels before the lecturer's proposals will fill our granaries. I never talk about this subject without quoting a sentence from an article written by Sir Robert Giffen in the *Nineteenth Century*. That sentence is, I think, most illuminating. It says: "My vocabulary fails me when I think of the miseries and ruin that must come to the people of this country in the first fortnight of a naval war, be it successful or be it unsuccessful." I think that a foodless people cannot go to war; a foodless people cannot support a war; and I endeavoured in this hall, when we were discussing what the standard of naval strength should be, to try and prove that our only standard of naval strength under our present economic conditions was one that would absolutely prevent war. There is no other standard for this country as we stand to-day—absolutely none. Major Stewart Murray has said that we are absolutely and entirely unorganised internally in any sort of way for war. When I seek to try and force these opinions on my fellow countrymen—and I try to do it a great deal—I find that this question of starvation is the only argument whereby I can get a tremendous interest taken in the condition and the possibilities of the Navy. The Royal Commission of 1905 reported, as we know, in a very negative way. One question that was asked of the Admiralty by that Commission was answered in a most extraordinary manner, and I should like to read it to you. The Admiralty was asked: "Assuming the country to be at war with any two of the great maritime Powers, are the Admiralty of opinion that our supplies of wheat and flour would arrive in practically the same volume as they do at present?" Practically the reply is: "Yes, the Admiralty believe that there would be no material diminution of the supplies of wheat and flour reaching the United Kingdom." That was in 1905, before the German scare came up. Although the Admiralty ought to have jolly well known that the German scare was in front of them, yet that was the answer they gave. At that time if a war had broken out between the United States and Germany and this country, what would our condition have been? Would we have been able to support a war then? I hold absolutely that we would not. The United States could have dominated all our supplies from the whole of the Continents of North and South America, and such a fleet as we would have had to send to contend with the United States would have left a very moderate remainder to fight the Germans in the North Sea. But for the purposes of my argument now, I only turn to the German scare, and I say that, assuming Germany desires to be at war with us, she will not face war unless she sees a fair chance of success. It will be absolutely impossible, and I think out of the question, to suppose that we shall bottle up the German fleet in German harbours; therefore, the North Sea will be practically full of fight, with a huge fleet on one side and a huge fleet on the other—battleships, cruisers, torpedo boats, vessels up to 36 knots chasing each other all over the North Sea. Under those circumstances, can there be any commerce in the North Sea at all? Then I ask you to turn your attention to the map of the North Sea, and notice particularly the east coast of England. Take the towns right away down from Aberdeen to London—Aberdeen, Leith, Hull, Grimsby, Shields, Newcastle, and the Port of London, all of them closed to commerce, think what such a war would mean to them. Why, it is absolutely certain that, even in a war with Germany alone, the condition of our people will become so fearful from want of food and raw material that war would have to be stopped. The lecturer says that the question has been threshed out *ad nauseam,* but nevertheless the danger remains. So I trust and hope that everybody present will endeavour as much as possible to spread the thought of the danger. For some reason or other the public Press will not take it up; it passes it by. You will see something said about starvation, but you will never see it pressed home. The papers do not like it for some reason or other; I have noticed several instances of this, and I clearly see what the Government thinks of it, because the other day Major Anstruther Gray asked the Prime Minister whether, having in view the changed conditions since the last Royal Commission was held, he would appoint a fresh Commission with a view to ensuring an adequate supply of food for the British people in time of war? The answer was this: "As the honourable and gallant Member is aware, the Royal Commission reported after a long and thorough investigation so recently as 1905, and I am not prepared as at present advised to recommend that a fresh enquiry should be undertaken." So that you see the evils of that Royal Commission still remain. I should like to urge some of the important people in this audience to begin an agitation by sending a letter to the Press calling attention to the question, because a foodless people cannot face war.

Lieut.-Colonel A. C. YATE:—I think the keynote of the lecture which we have heard has been that of tentative defiance of International Law. I am going to quote to you an instance of actual defiance of International Law. I refer to the blockade running which was carried out in the Sixties from the Bahamas. I myself was quartered in the Bahamas in 1877, and I then heard a good deal of what went on in the blockade running days; and, when the editor of a current periodical asked me to write an article on the rifle traffic in the Persian Gulf, it occurred to me to look up my recollections of the days of Hobart Pasha and Thomas Taylor, when they ran from the Bahamas to Savannah, Charlestown, Galveston, Wilmington, etc. The one thing I found there which I think is applicable to the present occasion is the lesson which they drew from their own experiences in running the blockade forty-five years ago. The inference they drew was that, if England was ever engaged in a serious war with a great naval Power, she need not be apprehensive about her food supplies. They contended that thousands of British ships, under (I think they said) both British and neutral flags, would immediately proceed to run any blockade that was formed. Such is the recorded opinion of two bold blockade runners, one of whom afterwards commanded the Turkish Navy. Some twenty years ago I was brought a good deal into contact with Von Wissmann—the man who founded the German East African Colony—and his comrades. One, Eugen Wolf, joined Count von Zeppelin in his earliest airship trials. I was talking one day to Wolf about Heligoland, and I remember he said to me, in a tone of indignation: "You have given us Heligoland, and we gave you in exchange 500,000 square miles of territory." I have not verified that statement, but that is what he said to me. A month or two later I was travelling by rail in Germany. Three Germans were in the compartment with me playing "skart." They took no notice of me till we neared the end of our journey.

and then one of them turned to me and said abruptly: "Sie haben Heligoland verloren." I replied: "Ich glaube dass Heligoland ist nichts." "Ich glaub'es auch," said the German. I have thought since that neither the German nor I correctly valued Heligoland, which possesses great possibilities, both for blockading and for blockade running, and also for reconnaissance. In the course of this meeting nobody has alluded to the immense resources of wheat which we have in India and Canada, and under our control. The United States Press, I notice, views with disapproval the inauguration of the Canadian Navy. The *New York Herald* is strongly opposed to it. Canada's own feelings on the matter, prompted by loyalty to the Mother-country and a desire for the security of herself and of the British Empire, would hardly appeal to the United States Press. My own earnest hope is, that the Canadian Navy and the Canadian granaries will guarantee the food supply of this country in time of war.

Sir THEODORE ANGIER, Bart.:—I have listened with the profoundest interest to the, I should almost style it, subsidiary course of lectures that we have had in addition to the lecture given by Mr. Owen, because I have not heard one speaker pin himself to a consideration of the lecturer's propositions. The additions which have been made have been general observations and propositions on the old topic of the food supply in time of war, and many of them certainly do come with a certain amount of freshness. I want to pin myself to my friend's paper, and to the recommendations contained therein, because I do not think there is time to discuss anything else. I look upon the subject in the light of my daily occupation, that of a shipowner, and in the further light of an old subject of one of the greatest Empires that has ever existed. I have always been a constant seeker of knowledge of that grand old Empire and how it stands, because your practical business man always wants to know how he stands—whether he is safe and progressive, and can go to sleep comfortably. Whenever any question is raised to-day, no matter where or what it is about, the thing that is always said is: "Where do I come in? How does it affect me?" I represent one of the greatest industries in this great Empire, the industry that has built it up, and propositions of the kind the lecturer has put before us to-day affect everyone concerned in that greatest of industries. I must say that I feel perfect satisfaction in looking upon the paper as a plain, commonsense proposition. The feasibility of its recommendations are almost guaranteed by one important provision that Mr. Owen does not forget to mention, and that is compensation—compensation for every interest, individual, or national, affected by his proposed action. Do you think the United State or any other Power would trouble their heads about a proposition like this when they get a full and reliable undertaking for indemnity? My friend Professor Holland whispers to me: "Oh, yes"; but you know that, after all, everything is boiled down to a question of money in these days. If we were in the position to go to war—and I take it we would not attempt to go to war unless we were in that position—or if the war was not of our seeking and we had to fight it out, would we bother our heads about International Law and the consequences of disobeying it? Never! If we honestly said to the world: "For our acts we stand to pay, and pay liberally," you would have the whole of the people of the world in your favour and you would carry them with you. As far as shipowners are concerned, they would take jolly good care to obey orders when they were paid for doing so, and, as has just been said by another speaker, it would not take them long to have a try at running a blockade, or anything else, if you pay them for it. You wait and see! The whole thing hinges on that provision—compensation. We must all recognise the fact that has been so repeatedly asserted here to-day, that in time of war we should have no use for magnanimity nor for the lawyers—we should not employ them, after our latest experiences.

Colonel W. T. DOONER, late Royal Inniskillen Fusiliers:—I think you will all agree that the statement the lecturer made at the commencement of his paper that he had been informed that this question had been threshed out *ad nauseam* was a mistake, and that we are all delighted he has come here to-day and read such an interesting lecture which has led to such a good discussion. He has referred to the question of the number of loaves that are made in this country out of foreign wheat, and has stated that with the increase which is likely to occur in the population of the country 95 out of every 100 of the loaves consumed in the United Kingdom will, a short time hence, be made from foreign flour, so that practically the entire population of these islands will have to be fed—as the lecturer expressed it—over the ship's rail. I want to ask Mr. Owen a question on that point, namely: As apparently granaries are condemned, whether the Royal Commission investigated the possibility of giving bounties to farmers to keep a stock of corn in rick or in stack for four or five months, and thus we should always have a reserve in case of war? It is very difficult to keep out politics in discussing a most important question like our food supply in time of war, but as other speakers have gone very near the political line, I would like to ask Mr. Owen also whether the question of Colonial preference was considered by the Commission. I am induced to refer to this preference question by a speech made by Lord Rosebery in Edinburgh, or somewhere in the North, some years ago, in which he said that a preference of two shillings per quarter on corn would not do agriculture the slightest good. Many of us will agree with his Lordship in that statement. But the point I want to make is, that at another meeting shortly afterwards, he informed his audience—as far as I recollect—that the result of imposing a preference would be that in all our Colonies the farmer would be growing corn to his heart's content, and that the shiploads of corn that would come into this country would injure agriculture. The papers took him up the next day and said he could not have it both ways. My own idea is, that if we could only get the Colonies to grow corn in the way that was suggested, if we had a fleet sufficient to protect the ocean highways and the ships bringing us these loads of corn, then these scares and difficulties would not arise if war was declared. These ships, if coming from Canada for instance, would endeavour to reach some of the many harbours on the coast of Ireland, and they could afterwards be convoyed to England or Scotland, and thus our food supply in time of war would not be in the precarious and uncertain state it is to-day. The last point I want to refer to is one mentioned by a previous speaker, namely, that a foodless nation cannot fight and cannot go to war. Some of us who are Guardians of the poor, and members of Distress and Unemployment Committees, and have to listen to tales of woe and suffering in times of profound peace, almost shudder to think of what would take place were we at war with some European nation. Major Stewart Murray stated that about 30 per cent. of the population would come on the Poor Law in time of war. Why, we could not possibly deal with such a number. Where would the money come from? You hear of ratepayers nowadays who simply cannot meet their engagements at all with rates at 9s. and 10s. or more in the £.

As I am on my feet I hope you will allow me to say, that I wish the President of the Local Government Board, Mr. John Burns, would never allow a local body to borrow a penny till the rates are down to 6s. 8d. in the £. I think this almost reckless running into debt of local authorities should not be permitted. I will only say in conclusion that starving people, hungry men with hungry wives and children, even in normal times, are difficult persons to deal with, and if in time of war, with a scramble for flour, as has been suggested, at £5 or £10 per quarter, we had such things occurring, as a previous speaker hinted at, we would be simply starved out at once and unable to continue any campaign.

Admiral the Hon. Sir EDMUND FREMANTLE, G.C.B., C.M.G. (Rear-Admiral of the United Kingdom):—I regret I have not been present to listen to the, I have no doubt, very interesting discussion that has taken place. This is a subject to which I have given considerable attention. I have studied the Blue Book dealing with the question of our food supply in time of war pretty fully, and a year ago I wrote a pamphlet about "Our Oversea Trade in Time of War." I only say that to show that I should have liked to deal fully with the subject; but I do not intend to do so now, because of the lateness of the hour. But I do wish to make two remarks on what the lecturer has said. The first point to which I wish to refer is the carriage by neutrals to neutral States. It seems to me that that is an extremely difficult thing to interfere with. Of course, it is possible that we might be able to do so. I have observed that, although it is generally said that neutrals will take care of themselves and will prevent any belligerent from interfering with them; I notice that they do not do so, generally because, as a rule, they are doing very good business as neutrals. In proof of that I would refer you to Captain Mahan's "War of 1812," where he mentions that notwithstanding the gross outrage which took place when one of our ships, the *Leopard*,[1] forced the *Chesapeake*, after an action, to give up some British men-of-war's men that she had on board, no war resulted, although diplomatic correspondence went on for five years later, and the probable reason was because they were doing a very good business. Then I want to refer for a moment to our ships going to neutral States—such a thing, for instance, as our ships going to Belgium. We know perfectly well that the food supplies which go to Belgium would go to Germany in most cases, because a very large proportion of the imports of Germany, we are told by the Official Returns, do go through either Belgium or Holland. All I wish to say with regard to that is, that we could deal with it by Orders in Council. As regards dealing with the question of neutrals going to a belligerent and landing on a belligerent's shores, we have only to declare a blockade to get over that difficulty. That is entirely in accord with International Law, as I think Professor Holland will bear me out. But my reason really for intervening at all in this discussion is that I am afraid a great many people, a great many outsiders would say: "You are dealing with our food supplies, but have left out the principal part; you are playing 'Hamlet' with the Prince of Denmark omitted, because in dealing with our food supplies the course to adopt is to make private property at sea immune from capture." You may have noticed in the papers to-day that a discussion took place yesterday on that subject. Sir John Brunner occupied the chair, and the lecture was given by Mr. Cohen. I am not going into that question fully, but I wish to call attention to it as it has been entirely left out by the lecturer. I do not know why he left it out, because it was not omitted from the consideration of the Royal Commission on Food Supply, and if I recollect aright, Professor Holland raised some objection to the question of the immunity of capture of private property in case of war having been brought into the report.

---

[1] In 1807 the *Leopard*, a 50-gun British ship, knowing that the American frigate *Chesapeake* had some British deserters on board, demanded that they should be given up; this being refused, an action took place, the *Chesapeake* was worsted, and gave up the deserters.

Professor HOLLAND :—That is so. I deprecated that being mentioned at all; I protested that our reference did not cover that at all, and I was very sorry it was touched upon in the Commission's Report.

Admiral FREMANTLE :—That is what I was referring to. I quite agree it ought not to have been put in, but it was mentioned, and there is an end of it. I wish to say, as a naval officer, that all the discussions which have taken place about that—and I am sure Sir Gerard Noel will agree with me in what I say—appear to me to have been of a purely academic nature, because I cannot imagine any Commander-in-Chief allowing ships to go backwards and forwards, giving information about what he is doing; nor can I imagine that it would be possible that, in case of war with Germany, a German ship could go into Southampton and quietly do business there. Why, of course, everybody would say, whether it was true or whether it was not—and it probably would be true—that she was full of spies, and that she was only doing business in disguise. Can you imagine that any German Admiral would for a moment allow any British ship to go anywhere near him in case of war? It is a thing which is impossible in my view. When it is said that the proper thing to do is to make private property at sea immune from capture, so that our food supplies will arrive all right, and that we have nothing to be afraid of—as was seriously argued in the discussion reported in the papers this morning—all I can say is, that it appears to me that, although it may be seriously argued, it is argued absolutely without knowledge of the technical naval questions involved.

Mr. ROBERT EDMONDSON :—I think great credit is due to the Executive of the Royal United Service Institution for bringing forward a subject of this kind for discussion. Two speakers this afternoon have touched slightly upon the question which I wish to raise, and that is the dangers that would arise in time of war from half-starved people. If we were to have war to-morrow with a naval Power, say France or Germany, or a combination of naval Powers, I can assure you that it would be very soon over, for this reason, that the hungry and starving people of this country would simply rise, and there would be chaos and bloodshed in less than a fortnight.

Mr. DOUGLAS OWEN, in reply, said :—About this late hour the question of "food supply" is apt to be active and personal, and I will therefore make my remarks as short as possible. I have been under the disadvantage to-day of having introduced considerations entirely new—new even to Professor Holland, which is saying much. Professor Holland, who commenced, much to my regret, by saying that he would not take up his full ten minutes—and he was true to his word—naturally pitched upon the weak point, the first point in my case. I was, indeed, doubtful whether

I should introduce it at all. I refer to the right to take possession of neutral property. On this one item, so far as International Law is concerned, I am entirely in accord with Professor Holland. But to my regret neither he nor Major Stewart Murray, whose remarks I heard with much interest, had anything to say; in fact nobody had anything to say except Sir Theodore Angier, on my main propostions, 1, 2, 3, and 4. I raised the question of the treatment of neutrals because I wanted to have it on record, and as I now have it on record, I have done with it. But that is not my main proposition. My main proposition is contained under the suggestions 1, 2, 3, and 4. Unfortunately, however, they are all new propositions, but doubtless people will consider them presently, and I certainly hope that Professor Holland will do so. I believe them, myself, to be entirely sound. Colonel Yate, I think it was, said that my lecture was an attack on International Law; I wish to claim that, with the one exception, that it is not so. My main propositions 1, 2, 3, and 4 are not against International Law at all. As Sir Theodore Angier justly said, my proposals have been the occasion for a series of subsidiary lectures. Many points that I did not mention have been dealt with, and I have been rather criticised because I did not refer to this or that amongst them. But I did not want to occupy time by referring to anything that had been discussed before. We have had the granary question, the national indemnity question, and so on, discussed over and over again. I therefore confined myself simply to these four points, entirely new, as I believe, which I desired to have discussed. A good many questions have been addressed to me to which I will reply as shortly as possible. Lord Ellenborough said that the days of grace in the time of the Crimean War were a mere diplomatic formality. That may have been so, but a diplomatic formality of no importance at the time may have far-reaching effects, and it is those very effects to which I wish to call attention. What may have been a mere formality has become almost International Law, although it is not International Law; in fact, it is opposed to International Law. I entirely agree with what Mr. Harry Quelch said on the subject of increasing the amount of food grown in our own country; but at the same time, if every available acre in the country were devoted to corn, we should not have enough for our consumption. Just as the Phœnicians had to get their corn from Solomon, and as, later, the Greeks and Romans had to go abroad for theirs, so we have now to go abroad for ours. Major Stewart Murray is, in my judgment, absolutely right when he says that some scheme for the organisation of relief in time of war should be arranged in time of peace. That is a most important subject. Captain Osborne complained that my scheme will not provide us with food when war breaks out. Of course you cannot pull a wire and have food drop down on the country; but what I am aiming at is the prevention of panic. I have emphasised the fact that it is the *fear* of shortage that will create a panic, and if the public can be satisfied that there will be no shortage, then we shall have no panic, or very much less panic. If the public are satisfied that we shall be able to bring in our own ships bound to other places, and that these ships will be coming in to-day, to-morrow, to-morrow week, and the week after, so as to maintain the ordinary supplies, this will allay panic, and that is the main object of my lecture. It is not the actual shortage that I fear so much as panic due to fear of shortage. With regard to the question of the insurance of food supplies or a national indemnity, I worked out a scheme of such indemnity at the expense of much labour, which I put before the Royal Commission, as I have stated. The witnesses, however, of whom I was one, so disagreed amongst themselves that the Commissioners said: "We cannot recommend anything," and they did not. But that does not at all affect my opinion on the subject of national indemnity. I believe the proposal to be right. As to the question of the immunity of private property, it was outside my subject. About four years ago I had the privilege of reading a paper here on that very subject, and I did not intend to raise the question again, whether I still hold the same views or not. I thank you for the attention with which you have listened to me.

The CHAIRMAN (Admiral-of-the-Fleet Sir G. H. U. Noel):—As no other gentleman apparently desires to speak, I will just say a few words in closing the discussion. Food supply is absolutely necessary in war time, and it is the principal duty of the Navy to guard and make safe the ocean. There have been many changes of late. We have withdrawn a great many ships from abroad, and have concentrated nearly all our force in home waters. There is a very good reason for those changes, but we should make up for the deficiency by building more ships for the protection of our interests abroad if we are to make our food supply secure. I was a member of the Royal Commission appointed in 1903 to report on "The supply of food and raw material in time of war," but unfortunately I was called away on duty and had to leave before the Commission came to an end. It was a very interesting Commission, as you may imagine, and though it ended perhaps in a somewhat unsatisfactory manner, the Government has got an exceedingly useful lot of information if they like to study the Minutes. I think that the collecting and tabulating of important evidence may generally be considered as the chief use of a Royal Commission; it is not so much what they finally agree to report. One of the gentlemen who has taken part in the discussion wanted to know whether the questions of granaries and farm produce were considered. If he will look at the Minutes he will see that they were thoroughly gone into. The principal question to be considered, as far as I am able to refer to it in the short space of time available, is the Navy. Naval action in war will, and must, to a certain extent, be guided by International Law; but where we find we cannot reasonably do this, why, we shall have to break the law. I quite agree with our lecturer in all that he has said. The last thing to do, of course, would be to interfere with neutrals; but if it is necessary, we must do it. It is very late, and I will not trouble you much more, but there was one question raised about blockade running, on which I might say a word or two. Blockade running is a thing that will have to be organised; and this cannot be done in the first period of the war. The difficulty will be to keep up the food supply during the first few weeks—as those who have spoken have told us—I am afraid there would be great trouble in England when the food began to get short. Blockade running, therefore, would not obviate this, and I think is not a thing that we can consider. The one thing that we can consider—and I am sorry it has been ruled out—is national indemnity. I am very sorry that no right conclusions were agreed to by the Committee that enquired into it. Many opinions are, no doubt, held on the subject, but I am certain in my own mind that it could be worked. A national indemnity which protected our food, brought to this country in British bottoms, would prevent a lot of trouble, and possibly secure our food supply. I am sure you will all agree with me that we have had an exceedingly interesting lecture, and one of the proofs of it is that it has been so well discussed. I thank you for so discussing it, and I convey your thanks to the lecturer for his very excellent paper.

The following letter has been received from Mr. H. Chaplin, who was to have taken the Chair at the meeting :—

11th November, 1909.

DEAR COLONEL LEETHAM,—

I was very sorry not to be at the meeting of the Royal United Service Institution yesterday, and I might have been after all, for I had to postpone going to Paris, but have been obliged to lay up in bed with some trouble in a vein since I spoke at Edinburgh to a great meeting on Friday last.

I should be glad if I could have a fuller copy of Mr. Douglas Owen's paper than I see in *The Times* to-day, for what I do see, I must confess, does not commend itself much to me.

No one ever reads the Reports of Royal Commissions in these days. But if those who are interested in this question would examine the Supplementary Report of the Royal Commission on the "Supply of Food and Raw Material in Time of War," published in 1905, they would find fully discussed in that Report, in clauses 82—96, a scheme which the Commissioners thoroughly examined, and in clauses 96—101 their recommendations of the scheme and the reasons for it.

I may say that it was founded on an offer from the Trafford Park Estate Company, to provide, by means of elevators by the side of the Manchester Ship Canal, unlimited capacity for any storage of grain that the Government might require, and at a cost which would not have added more than one quarter per cent. to what was annually spent at that time on the national defences of the country.

I still believe that the offer made at that time, coupled with the further recommendations with regard to it, made by the signatories to that report, would have been sufficient to secure all the storage that could be desired.

I may add that it was also recommended in the main report, which was signed by all the members of the Commission, that a scheme for offering storage, rent free, should be tried as an experiment, in paragraphs 261 and 262.

Yours truly,

HENRY CHAPLIN.

P.S.—I may say that the scheme referred to was proposed by Mr. Marshall Stevens, Managing Director of the Trafford Park Estate—a man of singular ability—and will be found in Section 82 and following sections of the Supplementary Report, and also in the Appendix, page 140 of the volume. I would also commend for careful perusal Sections 96, 97, and 98. With regard to the two latter (97 and 98), they could be made, of course, to ensure any supply that was desired; and as Tariff Reform, involving a duty on corn, is now the accepted policy of the Unionist Party, that difficulty in the way of our proposals would disappear in the event of a change of Government. May I add that as I drafted the whole of the Supplementary Reports myself, I have, or rather I had, the subjects at my fingers' ends, and had I but been here, with a leg-up, should have asked leave to state my views at your meeting. Cunnynghame, who proposed the scheme in Sections 97 and 98, was at that time an official very high in the Home Office—in fact, next to the Permanent Secretary.

READINESS OR RUIN.

By T. MILLER MAGUIRE, M.A., LL.D.
Barrister-at-Law, Inner Temple.

On Wednesday, 5 May, 1909.
Major-General Sir T. FRASER, K.C.B., C.M.G., in the Chair.

" To all nations war is a great matter. Upon the army death or life depends. It is the means of the existence or destruction of a State; therefore, it must be diligently studied."—*Sun, the Chinese Master.*

"The Kingdom of Heaven is compared not to any great kernel or nut, but to a grain of mustard seed."—*Bacon.*

" Degenerate arts and shifts whereby many counsellors and governors gain both favour with their masters and estimation with the vulgar, deserve no better a name than fiddling."—*Bacon.*

" Neither is money the sinews of war if the sinews of men's arms in base and effeminate people are failing."—*Bacon.*

" No nation which does not directly profess arms, may look to have greatness fall into its hands."—*Bacon.*

" To be masters of the sea is an abridgment of a monarchy."—*Bacon.* [But sea power alone never gave security to any Empire in any age.]

" Let any Prince think soberly of his forces except the Militia of his natives be of good and valiant soldiers."—*Bacon.*

" Let no nation expect to be great that is not awake upon any just occasion of arming."—*Bacon.*

" The causes of defeat come from within."—*Sun, the Chinese Master.*

" Nought can make us rue if England to herself do rest but true."—*Shakespeare.*

" In regard to war, wise expenses is true economy."—*Pitt, Earl of Chatham.*

" In the fall of Venice, think of thine, despite thy watery wall."—*Byron.*

Alexander, Marcus Aurelius, Tamerlane, Bacon, Turenne, Napoleon, Napier, Jackson, Moltke, Roberts, Wolseley, and scores of other great authorities, all agreed that the wisdom of Policy and War can only be learned from History.

The great wars, 1793-1815, illustrate every phase and every cause of victory and defeat, which can also be studied with almost equal advantage in the pages of Thucydides, Livy, Polybius, and Gibbon.

THE maxims at the head of the summary of the lecture which has been circulated are in themselves a lecture, and, if carefully studied by politicians, would prevent them from the ghastly blunders which, in the annals of many a State, prove that there is no choice between Readiness for War or Ruin, temporary or lasting, but at best appalling.

Not only do the authors above quoted set forth the lessons of universal history, but also every successful General who surpassed or subdued his contemporaries, and whose career has altered the destinies of any race, lays it down as a maxim for the guidance of leaders of mankind that it is only by reading and re-reading, by careful study and by profound reflection that the nations can be either properly prepared to defend themselves against their neighbours, or by assuming the offensive themselves, anticipate and prevent invasion, and turn the easy offensive of an aggressor into a costly and ruinous defensive. But in our country, and indeed in other countries also, as we shall see, these vital questions are often left to chance or entrusted to the care of base self-seeking adventurers, vote catchers and mere arithmeticians and sophists, skilled to gain the applause of the vulgar, but as to true policy—to them applies the saying of Themistocles, who, when desired at a feast to touch a lute, replied that he "could not fiddle, but he could make a small town a great city." There have been many modern professors of Monarchical and Democratic statescraft who could fiddle very cunningly, but so far from being able to make small states great, their gift lay the other way to bring a great and flourishing state to ruin and decay. See Bacon in that Essay 29, which every soldier and legislator should learn by heart.

In war "Readiness is all."—It is a kind of dissolution of the civil and ordinary conditions of natural life. If any careless, luxurious, sporting, gambling, ignorant community be not ready when in a great crisis of its fate, there is no escape from death and the contemptuous judgment of posterity. "There is no room left for repentance, none for pardon left." There may be death-bed repentance for an individual, there is none for a State.

The gallant Chairman introduced me with military prompti-

This lecture was delivered extempore and illustrated by large wall maps; but it can be followed by the help of any ordinary atlas.

tude, so that I had scarcely time to collect together the enormous supply of materials which is before me, and, therefore, I must trust to my memory for what I have to say on this occasion. I have been impressed to an extraordinary extent recently, not merely by any fears of my own for the future of the Empire, but by the singular state of apprehension which exists amongst practically all classes of His Majesty's subjects. Wherever one goes, one hears not exactly utterances of despair, but certainly the utterances of men who are very dubious, very uncertain about the continuity of the greatness of their country. Having regard to the fixedness of purpose, to the long reputation for success, and the tremendous energy and the marvellous expansion of the race, as set forth on that map of Europe, these utterances puzzle and perplex me. And the remarks are not confined to the very unsatisfactory state of the Navy and the Army. They are of a far-reaching kind. For example, we are informed by almost every politician—I am not going to favour on this platform one party or to commit myself to any party—we are gravely informed by many leaders of politics, and by many leaders of finance, and by many shopkeepers and lawyers, indeed by every class, that our security and carelessness and cult of games will sap the foundations of our commercial life. Surely this is a very serious matter.

We are told everywhere we go that the race, if not exactly deteriorated already, is certainly deteriorating. I was at a large meeting recently in the Mansion House, in which prominent authorities took part and heard very pessimistic views of the coming race of Great Britain. Unless radical reforms are forthwith introduced, Britons won't be fit for their responsibilities. This doctrine was also preached not long ago in the Royal Colonial Institute.

In this Hall the principal topics discussed relate to the twin pillars of our State. Undoubtedly, in every age, and under every condition, the men who fight for their country by sea or on land are pillars of the State; and to promote their well-being and to insist on an ample supply of everything which conduces to the efficiency of these forces, and to their absolute fitness to "talk to their enemies at the gate," is the whole aim of the existence of this Institution. But this Institution must necessarily also be concerned with the foundations of all greatness and with the bed rock on which are built these two pillars of the State. What is that? The family. The man of strength, of body and brain, the rich man of brains fit to lead his people; the poor man of body fit to fight for his people and protect his wife are the product of healthy, skilled, strong, earnest parents. The principal point of all material greatness is a race of military men, and to secure that our race is fit for Empire is the ardent desire of all our members. This is our *raison d être* as a Society—to protect and elevate our race. Such a race need fear no enemy in any just cause. This is the gist of human experience. Lord Bacon, the greatest British philosopher, says, "Neither is money the sinews of war if the sinews of the man's arms in base and effeminate people are failing." And he goes on to say, let any Prince, whatever his ordnance, whatever the population of his cities, whatever the material wealth, think meanly of his resources, unless the breed and disposition of his people be stout and warlike.

Your experience, Sir, is remarkable, reaching from Constantinople to the Franco-German War—in fact, I believe you helped to rebuild for the Turks the defences of Constantinople—the fortifications once stormed as against the decadent Greek Empire by Othman's race.

You will admit that there is not the least use of talking, except from the temporary point of view, of the strength of the Army and the Navy unless we are able to secure a breed of healthy men and sound women, and to secure conditions of life in which the childhood of the people, the very soul of the people, may be trained to be useful, strong and energetic and valiant. Chivalry, Bushido, Manhood, fair women and brave men form the very cynosure of existence.

The elements of strategy of our nation are the Navy, Army, money and food, physique and brains—these six—there were never any other six than these—all depend on the woman, the mother worshipped by many a race for being a mother. I say that these questions are now, in the opinion of the public, matters of the gravest apprehension.

I was at a gathering at the Mansion House to discuss sociology and the conditions of modern English social life. I had expected music, conversation, the charming presence and the company and conversation of the ladies. The ladies were there and the music was there, but neither the ladies nor the men paid much attention to anything except to one question: how long is this Empire to last? Is it true that we may be invaded? Are we degraded by a base and worthless civilisation as honest lawyers and the Bishop of London assert? Is it true that nothing will awaken the mass of our rich, or of our poor, to a sense of their responsibilities, except invasion or revolution? "Is that true?" I hope that it is not true. But the only possible way from preventing this theory from becoming all too true is to listen to the most certain oracles of time and the experience of mankind, as set down in the synopsis of my lecture, and prepare in time.

I mention the Mansion House meeting because London is the centre of the whole British Empire, and is also to a considerable extent the centre of all the commercial interests, and credit and financial concerns of mankind. Look carefully at the map and the position of the United Kingdom, and of its lines of communication with all our Empire, and weigh the position and the dangers of London. Therefore, we frequent the City of London and associate with its merchants in our happier leisure hours, even as we frequent the miserable abodes of wretchedness and poverty in our less happy leisure hours. Strategy and

Politics, Greatness and Decay, like Death visit alike the palace of the noble and the rich and the garrets and cellars of the lowly and the outcast. The only way whereby any man can attain that knowledge and that wisdom which are necessary for even pretending to give advice in a crisis such as this is by patience and tribulation. At the Mansion House meeting the week before, I was listening to distinguished persons—not mere ordinary citizens in their way, but men of light and leading. They all admitted that there is no use in shirking this deplorable fact, that the mass of the British community were rapidly in danger of losing their manhood, their womanhood, and of being incapable of reproducing a fighting race. British mothers will soon, in Lancashire and in Hoxton and in Homer Street, Liverpool, and between Liverpool and Oldham, and in Glasgow and Dublin, be unfit to give birth to men. These are not my words; they are the words of an ex-Lord Chancellor, of Financiers and Bishops, and are confirmed in the public press.

But the recruiting returns and the low physical standard for the army and the increasing difficulty of getting sound lads for the navy, and the awful difficulty of getting officers up to the level of education of their status, speak for themselves. I am very thankful indeed for the opportunity of showing from history as well as from *a priori* reasoning, that our people, like every other people, must devote yourselves to being ready for war, and that if you do not, you will see from the records of every other country how serious, how costly, and how terrible and deplorable a matter it is not to be ready for war. Now, the question, therefore, divides itself into, first the navy, then the army, then the state of education of the richer rank and the physical and mental capacity of all ranks. I hate the word class —there only ought to be one class among Britons, whatever their rank, there ought to be one great humanity, self-denying, self-respecting family or clan, just as to a very considerable extent all Mahommedans of every colour and rank are brethren.

Is the education of the richer folk, is their study, are their objectives and their ideals, are their occupations in their leisure hours, is the general tenour of their life such as to fit them to be leaders of a race with responsibilities in all the territory set forth on our map of Empire, eleven to twelve million square miles occupied by hundreds of millions of every colour and creed?

A vital question for every race always is War. Are we ready for war? When are we going to get ready for war? What would be our condition if we were not ready? And what were the conditions of other nations when they were not ready? I propose to take these *seriatim*.

Now for the first, the Navy. You have in the summary before you the opinion of Lord Bacon, who cannot be read too often, that the command of the seas means command of both the Indies, *i.e.*, Asia and America. To our Nation, even in his time, the command of the sea was the "principal dowry of

Great Britain." That is a fine phrase, that is a splendid inheritance, that is a noble tradition of which now even the most decadent Briton in the slum of London or Glasgow is proud. You can hear "Rule Britannia" sung by poor wretched folk in the sorry refuges of hopeless poverty. That was Lord Bacon's opinion in 1612. We are now in 1909. If the command of the sea was of vital importance then as a contingent remainder, so to speak of our inheritance as the security for our future estate, at a time when Englishmen grew enough food and to spare close to their own homesteads; what is command of the sea now to a nation that cannot live on its own food supply for three months? It could exist then for years, if it lost sea power, though, of course, it could have no empire.

But ours is a nation linked by strategic communications with every coast, and having a sea-borne commerce worth £1,700,000,000 a year, without which its humblest people, as well as its richest people, could scarcely buy their daily bread or carry on the simplest industry; whose land frontiers touch every great power, requiring continual intercommunication and circulation of its soldiers, with coaling stations in every sea, with Colonies depending for their existence upon us, and with brown and black and yellow races of all degrees of civilisation hanging on to us. If we dissappoint humanity as Captain Mahan described in his magnificent essay published a few weeks ago, if we let that empire go, there is scarcely a single family on earth that would not be affected. A new power, the United States, strong as it is in land resources, and mighty as is its wealth, and deplorable as is the condition of too many of its people—ground down like our factory operatives by the most accursed system that ever existed upon earth, the paltry profit-gaining Manchester school of economics—the United States would feel our loss also. This is not my saying, it is Captain Mahan's.

Some silly editors have recently been contending no one ought to discuss these questions except a naval expert. One might as well say that no one ought to go to law unless he is a judge, or feel a toothache unless he is a dentist. But I have before me gentlemen who are naval experts, and I leave naval technicalities to them. I ask them are they satified? Is it a worthy thing for a nation like ours to drift even near to a naval disaster? Would it be a worthy thing even for any person in this room whose health is indifferent and is in danger of death in two or three or four or five years, or even in ten years, not to insure to the full amount of his resources for his family? Is it worthy of any man to be indifferent for even one day to the future happiness of his child? Would it be a worthy thing for any of us to be indifferent to such an appalling catastrophe as may fall upon the mass of our people if it be true—I do not say it is—as was said in Parliament, not by Mr. Balfour, but by the Prime Minister and Mr. McKenna? If any of them be telling the truth—if all of them be telling the truth, if politics be not one congested concatination of the incarnation of lying, then it becomes us to think over their statements as to the Navy and insist on its being able to cope with all possible adversaries. The Navy may be in danger if we do not shake off sloth and listen. I leave the answer to Naval officers present.

There are many ladies here; the answer interests them even more than the men. When Paris was invested the women were more miserable than the men; and when they saw a little child crying for bread, both men and women felt that the unreadiness for war affected the child more than either of them. And what unworthy folk they were to be gulled by politicians or by self-seeking military men, the baser tools of political schemers, into putting that innocent little child into that position! It is perfectly clear that it is not panic or unmanly to be prepared for danger. When I am told that we are in danger of our life through having gangrene, or, indeed, a much less distressing malady, is it not unmanly not to go and see doctors? Suppose any expert said that you had a gangrene or appendicitis, would it be worth while spending a few shillings or a few guineas just to test his judgment? And so, if we are told by any expert that we are going to ruin our nation in five years unless we are prepared, is that not a topic worthy of discussion on any platform? Must not a remedy be applied if they are right—and if they are exaggerating at any rate we may be assured that we are not going to ruin and we are at pains not to deserve ruin by carelessness and stupidity, or worse, by party spirit and recklessness.

This is a matter that comes home to the business and the bosoms of us all—it is not a party matter—we cannot trust the life of our race to mere officialdom, bureaucratic self-conceit, or even to Parliament. Parliament is only a very poor voice of the people—a very uncertain voice, a very capricious voice, a very ignorant voice, and very often a very knavish voice—not alone in this country but in other countries. I advise you, therefore, to begin to look into the matter yourselves, and in so doing I am echoing the late Lord Salisbury, who said that the condition of the defence of the Empire, and of these Isles in particular, is not only a matter for abstract political or metaphysical strategists, or dialectic tacticians, or philosophical humanitarians, but for every man, woman and child in this land as it would be for the consideration of populations in other lands, such as Germany and France. So much for the Navy. I simply throw this out as a subject for discussion, not as a matter of which I personally could say anything that could throw any further light on the existing state of things. I have here before me the view of a great number of authorities which I could go on reading till midnight, all of them of the utmost significance, and every one of them, without exception, tending to convince students who may be called a kind of jury in the matter. In this case the jurors are asked to believe by both sides to the issue that one main contention is true, that if

England does not take care, within ten years its condition will be awfully serious, if not irreparable. This is all I have to say about the Navy and its readiness. If it is not ready our fate will be far more deplorable than that of France in 1871, or even Russia in 1905. A few years ago we were discussing here and elsewhere a political and strategic monstrosity called the "blue water school." Of all the foolery that ever yet temporarily eclipsed the judgment of mankind this preposterous school was the most absurd. Even if there was any blue water, which there is not. There are Yellow seas and Black seas and Red seas, but no blue seas. The notion that any nation in any age of the world was ever saved by mere sea power or by a blue water school, or any other similar sophistry, is unfitting of discussion in this room, in which the only elements of national security are accepted as outside the range of cavil, let alone serious discussion. They are axiomatic.

But we must have an Army. An empire must have an efficient military as well as naval force. We cannot keep our Empire, whoever else might keep an empire, if the army was not brought hither and thither under the guardianship of the navy, and if the navy is not supported in every part of the world, by landing parties of the army. Is not that a truism? Is it not the most certain oracle of time? I go further, and I say that never yet in your history, or in any other history, was any war brought to a successful termination as against a Continental State by sea power alone. Take the Peninsula war, badly as it was managed at first. It was the ulcer, according to Napoleon, that sapped his strength; and it was the British army in the Peninsula which was the nucleus of the ulcer which wore out all the energy of his brilliant marshals. Take Waterloo: it was not the navy that charged, but the Union Brigade. So has it been all through history. Take Carthage; take all the lessons of mankind. I go further, and say that no naval power unsupported by a military expedition ever yet took one great maritime fortress. Is that true? I think the gallant General under the gallery will agree with me, and if I am supported by General Hutchinson I have a very competent ally. I fear that some of the ladies might not know as much as General Hutchinson; I will give them a few examples. Was Sebastopol taken by the navy, when we had invincible command of the sea? Was Charleston taken by the United States navy when the Federals had command of the sea? Take the United States against the Spaniards; was Santiago taken without the aid of the soldiery? Now take Port Arthur. Whether Port Arthur was defended in one war by the Chinese, or in another war by the heroic Russians, in either case it was not the navy that took Port Arthur, it was the army. So then, with all due respect to the navy, and insisting on it and valuing it above all things, and recognising the truth now of Burke's words in 1797, when he said that you could not mention a ship, however small, of the King's navy without having immediately brought up by connotation to your thoughts some record of heroism in every part of the world, we cannot do without an army, and the smaller its numbers the greater must be its efficiency. No amount of political chicanery can get away from the fact that the army is as necessary as the navy in our Empire. Now, do any gentlemen in this room believe that our army at the present moment is made efficient, either by the system of recruitment or the home life of recruits before enlisting, or the kind of chivalry and bushido that prevails among the families of these poor men, or by the tone of officialism, or by the encouragement of Parliament, or by the armament which, I believe, is not now up to that of other States in guns or rifles? It is a terrible and villainous thing to send a soldier abroad to risk his life for his fellow citizens with inferior armaments, and knowingly with inferior armaments to those of the enemy.

If our nation with an income bringing in £300,000,000 a year more than the Germans is worse off as to armaments than the Germans, if that allegation be true, then a deadly scandal is being inflicted on us all as well as quite unnecessary risks on our soldiers. With regard to your regular army, we know very well the splendid work of Generals like Sir J. French, General Smith-Dorrien, and other leading officers of the army. We also know that the drawbacks under which they labour are not their own fault, but the fault of society. Defects with regard to education, instruction and other matters, are not their fault, but the fault of environment against which every one of our leading Generals has protested for twenty-five consecutive years. I ask is the regular army sufficient in guns and other weapons, in horses and commissariat wagons and all kinds of other stores? Are they as ready as other regular armies? Take Germany: every corps in Germany is set forth here (indicating places on a *dislokatione* map), every German squadron, every German gun and every German battalion, there you have them. Their duty is bound up in that map of Central Europe. The 5th Army Corps is in Posen, the 6th Army Corps in Silesia, the 10th in Hanover, and so on, and a great mass of men looking towards France there. Here is the French Army (indicating the position of corps on a French map.) Take the 18th Corps; here it is at Bordeaux. You will find every corps indicated. There is no secrecy about the matter.

I am tired about all the secrecy and anti-German ravings of the yellow Press—they are mere ignorant futilities, though some of their members boast that they and not the Army Council "boomed" the territorial Army. This information can be bought for a few shillings. Any intelligence department anywhere should know all about the resources, financial, military, naval, food supply and location of every neighbouring army.

The functions of these corps are strictly limited, but the functions of the British army are unlimited.

"Icing the Pole and in the Torrid Zone
Dark—heaving, boundless, endless and sublime."

There were eighty different campaigns in the reign of Queen Victoria alone. Have you a sufficient regular army for the multitudinous duties of the richest of Empires, the most populous part of the world except China? I believe that China will crush you if you are not very careful—this I am informed on the very best authority. My views are confirmed by a conversation I had recently with some of the ablest officers in the German army, who are becoming greatly afraid that twenty or thirty years hence it will not be the British or the Russian who will threaten the effete civilisation of industrial and degenerate Europe, but a far more dread invasion than that of Central Asian Tartars or Turks. An invasion of Mongols. The Germans centuries ago met and repulsed the enormous rush of their all overwhelming horde in the district where I point out on the map the headquarters of brigades of the 4th and 6th Corps are now. If you are not ready are you courting disaster or not? Are you acting unwisely? Are you true to yourselves if you are under thirty? Are you true to your children if you are over sixty? I am not an alarmist; I would any day sooner laugh than cry. I don't like carking care any more than the liveliest youth in my audience—

"With mirth and laughter let old wrinkles come,
And rather let my liver heat with wine
Than my heart cool with mortifying groans."—

But are you convinced that this regular army of yours is fit and efficient for its duty? And if it is not, are you going to make it fit for its duty forthwith? For these duties come as a thief in the night. Do not you know that your position in the near East has been very nearly lost? What is the good of talking about sympathy with Turkey? Sympathy!—are the New or Old Turks working on sympathy? Do you mean to tell me that the New Turks would have had the least chance whatever of being Masters in Constantinople now if they had relied on anything in the way of abstract Hague-Conference humanitarianism? How did they succeed? Chefket Pasha might be the incarnation of wisdom, with all the Ulema behind him, and he would be outside Constantinople to-day, if there had not been ready and well-trained armies with good brains at Salonica and Adrianople. That is how you get on in this world, and not by abstract humanitarianism. They were talking about philosophy and a new kind of elaborate fencing exercise to Uncle Toby in that celebrated book of Tristram Shandy, by Stern. "One good bayonet thrust would be worth the whole of it," said Corporal Trim. One good army corps, well organised and ready, is worth any amount of military jetsam and flotsam. I am quite convinced that our regular army, in spite of the splendid efforts and self sacrifice of officers and men, is not kept up to the proper standard for a race with our dangers and responsibilities. The last time I spoke in this Institution I followed my lamented friend, Mr. Arnold Foster. You will not object to my paying a tribute to a man with whom I was associated for twenty-five years. He may have had faults, and who has not? But certainly Mr. Arnold Foster most earnestly and devoutedly gave all that in him was—to speak alas! in the past tense—to acquiring knowledge which might be useful to the military institutions of his country. He made a speech here about the Special Reserve. Officer after officer got up to speak. I only spoke as an enquirer after truth, but Mr. Arnold Foster spoke as having been a responsible Minister of State. Every speaker declared that the Special Reserve was the very reverse of fit for its purposes. Is that true? If it is true, is it not a perilous thing? What is the Special Reserve for? The Special Reserve is not a reserve to go immediately to the front on the mobilisation of certain battalions. The Special Reserve, I take it, is a body of men who, when the army is called up and mobilised for a foreign war, does not go to the front. That is done by the ordinary Reserve. But when any casualties occur during the war, then the Special Reserve fills up those casualties. But suppose there is no sufficient and efficient Special Reserve at all, how can it fill up the vacancies with efficiency? Then it comes to this: as far as we heard at the last meeting, it was a special, peculiar kind of Reserve that was not fit for any purpose whatever. The officers were not properly trained, the men were improperly equipped. They were poor, wretched fellows, many of them unemployed and many of them serving—for what? Food; not under conscription or obligatory service, as do crowds of well-educated men in Germany. They were not conscripts under such conditions. These poor men of the Special Reserve, noted and marked for death, mark you, because they were to go to the front when the war had become so serious that it was absolutely necessary to get some creatures to fill up the depleted ranks, decimated by bullets and shells. These poor men, these unemployed, were—what? Boys, the flotsam and jetsam of the decading British humanity. They are the miserable products of our deadly dull slums in Kensington and Westminster, of the permanent homes of poverty or worse in Whitechapel, and Glasgow, of Tabard Road, and similar miles of the herded desecration of our race. Their parents live in such blighting misery that the police told me a few Saturday nights ago that if they lived in such homes they "would be drunk every night of their lives." A large number of the Special Reserves, then, have been enlisted, not because of elevation or dignity, as Mr. Arnold Foster, almost in his dying words, proclaimed here, but because they were the creatures of misery and poverty and shame. Is that a proper state of things for a nation like this?

Is there any honour in that? Does not your soul shrink within you as you contemplate such a thing?

Then what about the officer? Only to-day I heard from a young officer of the deplorable way in which he is treated. It is a great compliment for a man to volunteer to be an officer at all in our army; he get little pay, little thanks, and has no legal rights and no status. A man who goes as an officer under such conditions is a highly estimable citizen. The officers are not properly instructed, indeed, it is officially reported that they are among the worst educated men of their rank in Europe or America. A non-instructed officer is, under modern conditions of life, nearly as little use in war as a weak or infirm soldier. He is a danger to himself and to the race. Is that Special Reserve, then, an institution by which a nation of forty millions, of whom a large number are rich and prosperous, governing 360,000,000 of the human race, with the whole future of humanity depending upon it, can be proud? Are you proud of your Special Reserve? or will you change it and make it worthy of yourselves, worthy of your women, and make it so that young girls can walk along with its soldiers and be proud of them? For unless you have young girls who are proud of the men, the men are certainly not fit to be proud of themselves.

Now we will come to another point—the Territorial Army. Many of us here are members of the Territorial army, and I am not going to say one word against it. On the contrary, as we may have no other home forces available, it would be madness to drop recruiting for this force, and doing our best to make it a utility instead of a futility. If we had obligatory military service to-morrow, we must have corporals, sergeants, lieutenants and captains, or the thing would be a farce. Supposing there had been no pre-revolutionary soldiers like Soult or Napoleon, and the galaxy of young soldiers before 1792 who became so famous 1793 to 1815, what would have become of the untrained and improvised *levée en masse?* Would the French have won any victories at all even under Napoleon? He had to get men to work with, and these were the men who commenced their careers under the Monarchy. Hence even if we could hope for obligatory military service to-morrow, it is the bounden duty of every one of us to learn all we can of the art of war now, wherever we can get it, so that there may be some people fit to go and take control of the new levies. In point of fact, when Gambetta organised those enormous levies in France with which he proposed to relieve Paris, he failed very largely because the officers and men of the regular army, owing to the nation not being prepared against Germany, were then prisoners in Germany or shut up in garrisons. Had he been able to procure officers and sergeants and cavalry, commissariat and artillery, had he got time he could have cut the lines of communication between Paris and Strasburg, and France might have "been the grave of Germany." You cannot improvise cavalry, you cannot improvise artillery, you cannot improvise commissariat. The soldiers of Chanzy and Faidherbe and Bourbaki starved and perished in their own country, and consequently I say that, as we have a Territorial army, we ought to do everything we can to learn all we can through it, and to support it. I was glad to see in the papers recently a letter from one of Mr. Haldane's political opponents, Mr. George Wyndham, setting forth this advice very clearly.

It is admitted on all hands now that there may be an invasion. You see that the Blue Water School is as dead as the dodo, or as any other kind of aquatic foolish bird. A circular issued by the Army Council insists that the object of the Territorial army is to resist invasion. They contend that we may have an invasion, and they say that the invasion may occur when the regular army is abroad; and certainly I would advise invaders to adopt that suggestion. The less efficient soldiers there are at any moment, then, the invader should come; at least, if I were an invader, I would not try to force myself into a man's house when "the strong man armed" was within. There may be an invasion of our "tight little, right little island," and we are told officially that the Territorial army must protect us. This theory has been taught in this Hall and elsewhere for years, but all in vain. The Fleet may not be able to stop an invasion; in fact, our fleet may conceivably be inferior, at a given moment, to another fleet. It was almost high treason for us to say that a few years ago, but it is highly orthodox for us to say so now. You will not turn me out for saying it now, but anyone was in danger of being turned out when he said so a few years ago. The War Office now declares that in spite of all our naval power there may be an invasion; and who are to protect you but the Territorial army?

Now, I would put it to you, is the Territorial army in a state of efficiency for the purpose? Is its recruitment liberal and large enough? You have obtained recruits by all kinds of methods, I admit. They have been coaxed, wheedled and coerced, cherished, lavishly rewarded, cajoled. If we had been coaxed, when I joined the Volunteers, half as much, we should have been very proud of ourselves. We were kicked. I don't blame you at all in the least, but is the Territorial force sufficient? Would it have saved England from invasion in 1803? Had you not twice as large a force in 1803 out of ten million English as you have now out of thirty million English? If you required such an enormous force in 1803, when you had absolute and undisputed command of the sea, as was proved at Trafalgar, 1805, who will stand up here and tell me that this Territorial force can possibly be sufficient for its purposes in 1909 unless it is enlarged and strengthened in every way? I say all this without in the least speaking with any disrespect to any individual member of the Territorial force. Consequently, I hope that I have proved very shortly that there certainly is a lack of readiness in many respects, and that it is the duty of everyone here to pause and consider and reflect how he, in his own individual capacity, can bring such pressure to bear upon the Government that as soon as possible we may be as well prepared for contingencies—far more terrible now than they would have been in 1803—at least as well prepared as our ancestors were at that date.

Now, Sir, am I demanding anthing enormous? Why should not forty millions of people be as well prepared as were ten millions of people?

Why should we not be as well prepared as Germany in every way, and fully as well prepared as we were against Napoleon. Why are not forty-three millions of people as well prepared as were eighteen millions of people? Why should not people whose total capital is £15,000,000,000 be as well prepared as people whose total capital was £4,000,000,000? Why, I don't see. We are dwellers by the banks of the Thames or Clyde or Shannon! Is there anything in the nature of us, in the appearance of us, in the hereditary instincts of us, in the historical traditions of us, that would lead us to teach our children that, male or female, they are destined to be and ought to be in any respect inferior to the dweller on the banks of the Rhine or the Elbe or the Oder? I would like some traveller in antique cities, or in modern factory towns even, to tell me is there any reason in the nature of things that if the Germans have become so very great and powerful as to be leaders in sociology and in science, leaders in the study of history, even of English history, only second in commerce to ourselves, leaders in war, with that enormous army spread out on that map of Germany, and leaders in industry and able also to make a bid for naval supremacy, why the United Kingdom should not be equal in every way? Preparation for the attainment of greatness is the next best thing to being great. For Germany to have managed in thirty years, from being one of the least of the commercial and maritime powers, to be able to beat, in regard to commerce, France and Russia and Italy put together is a most startling success. But why are we relatively inferior now? The cause must be in something evil in our institutes and habits created by man; there is nothing singularly bad in us as created by God. The Celtic race is not an ignoble race, although, I am sorry to say, it has been largely exploited and destroyed. Surely the magnificent Saxon race is not an ignoble race. Surely there is nothing the German can do that a Saxon cannot do. Surely a Highlander from Scotland is as good a man as a Highlander from Saxony, although the latter does not wear a kilt. What is there in the nature of things to cause us to be degenerate absolutely and relatively compared with our folk 1804-1809? I hope in another lecture that some wise speakers will come forward and prove that many reasons exist why, within ten years, there should not be a half-starved child in the whole miserable factory system, and that every child and every father should be in every respect as well treated as persons of the same rank are in Germany, and every mother should have a chance of rearing her children as God and Nature intended children to be reared; why every man should be impregnated with a noble zeal to help his sisters and his daughters and to help his country and to secure the greatness of his Empire. There is no reason, except in ourselves. Sun, the Chinaman, wrote: "The decay of a nation is in the nation," and I assure you that if I read out to you, had I the time, the state of education among the richer classes, the miserable and degrading reports about the fashion in which young men are prepared for the army—the very soul of our nation—the despicable way in which the young students are treated in the public schools, there is not a man here who is a father that would not join in league at once to mend these things.

You must elevate yourselves. You must be true to yourselves. You must secure the elevation of the bodies of the poor; you must secure the development of the brains of the rich, and then you can laugh at any or every threat of attitude from any greater—you can worship the goddess Britannia without any fear of making her ashamed.

Let us now look at the history of a hundred years ago. Just look at what England did between the years 1793 and 1815. Why, Sir, with the exception of Canada and a very small part of India, she started all the Empire on the map. She spent £1,000,000,000 of money against the French Revolution and the Empire; she sent expeditions to every part of the earth, and conquered on every sea from the Potomac to the Irrawaddy.

Look at the map of America:—Think of our numerous expeditions to the various West Indian Isles, and in South America, and our attack on Washington itself.

Look at the Map of Africa:—Capture of the Cape of Good Hope (twice); expeditions to Egypt (twice); Mauritius taken.

See the map of Asia:—Tippoo Sahib ruined; Ceylon taken; Mahratta Wars—Delhi taken; Goorkha War—Java taken.

Return to Europe:—Think of our many expeditions to Copenhagen, to Italy and Belgium and Holland, and the coasts of France. Why we even fought the Turks in that period! I am glad to say that the Turks have not forgotten their ancient manhood yet. When I was at Salonica about twelve years ago and saw the armies of the Turks marching through that town after smashing up Greece; when talking to the officers and looking at these magnificent men from Albania and Macedonia and Asia Minor, I said, "Whatever there may be in Islam, whether it be true or false, we need not be surprised that your ancestors, a few hundred years ago, were able to march through the desert parts of Central Asia, all through Asia Minor, and take Constantinople." How different the scene enacted at the

Crystal Palace a short time ago, where miserable fools of poor folk, without even girls to cheer them, were calculating the chances of football kickers or some other buffoons, just as the Greeks were betting on green and blue charioteers when the Turks were preparing to storm Constantinople. I was not a bit surprised when I saw the Greeks beside the Turks in 1898. Manhood is, after all, something, whether a man be Japanese or Turkish or English. A mere " sporting " spectator at horse races or football or cricket, why he is no man; he is not even fit to make love to a pretty girl. A man who rides horses is quite a different creature.

Well, Sir, I was just about to go on to deal with the exploits of the British between 1800 and 1815. The English were everywhere at that time. They marched from Torres Vedras to the Pyrenees. There is a magnificent song about it. It should be printed and sung at every festival in your land:—

" They drove the Frenchmen all before them
As foam is driven before the stormy breeze;
Then they marched on, their conquering banner o'er them,
From Torres Vedras to the Pyrenees."

Is not that something to remember?

But a change came o'er the spirit of their dream. In the Peace between 1815 and 1853 a terrible change took place. Mankind became, in the factories under the new commercial system, not the assets of the State, but the adjuncts of a machine. Nothing could awaken our rich people from their dream that opulence was everything, that manhood was nothing. Poor little children, as Dickens describes, and of whom Lord Shaftesbury was the champion, were brought out from the cradle to tend machines or furnaces; women were grovelling on the ground in mines, drawing after them waggons. Humanity was potted; no prevision, no generosity, nothing good. Our land became one sink of level avarice and its victims. The Duke of Wellington, whose speech I have here before me, pointed out in 1849 clearly, " If you don't look out, war may come; I see the cloud in the East already—war may come—are you ready?" He was laughed to scorn; I suppose you know this as well as I do? I am only bringing up to the minds of my audience the lessons of the past to confirm the precepts of the present.

What took place during the Crimean War?

Horrible disaster, disgraceful neglect of the sick, starvation and misery, fruitless exertions of sacrificing heroes—why? Because political and commercial speculators would not take the Genius of war by its forelock in time. 4,000 fell by the sword—and 20,000 died through mistakes of the Government. But what had you before that War? You had the Universal Exhibition in Hyde Park. There were speeches made then, and I assure you, when I read them again a few months ago, I could scarcely keep my temper. Commerce was going to rule; there would be no more wars! But there was war in 1854, and war in Italy in 1859.

There was a terrible and appalling war in the United States of America 1861-65. The Americans had neglected their army, saying, "We are not Europeans, we are not going to fight anyone; we are wise men of peace; and we have no militarism here. They were not fools enough to waste money and life in battles." And yet, because of four million negroes, men and women, they did fight. They fought to the death. Do you see that map? Do you see the letters "W" and "R." Washington and Richmond, 100 miles between them. That is not very far, is it? Yet, in five months of one year 100,000 men fell dead there. Whole territories from Chattanooga to Savannah and up to Charleston were destroyed, £1,000,000,000 of our money was spent by one side only on one of the wars which were never to have occurred any more, according to the orators of the International Exhibition of Hyde Park; and sophists here are still talking equal nonsense. Why this waste? Because warnings were not taken, and a sufficient and efficient army was not ready to put down the rising. Immediately after this war was over, down went Austria in seven weeks—before whom? Before North Germany. How? Because the brains of the German army were superior, and because the organisation of the German army was superior, and because everything was ready—not because the Austrians were cowards. I see a gentleman in the corner who knows Hungary better than I do. Perhaps he might say a word as to whether Hungarian cavalry are cowards. Are Austrians even now cowards? Austria has recuperated. It had a sufficient army and sufficient German support to be able to scoff at our feeble diplomacy during the past year.

Yet in 1866 war broke out on June 14th. Three different German armies, converged from Breslau, Berlin and Dresden on to the Bohemian frontier by June 25th; all the passes and several river obstacles were traversed by June 29th; and the North Germans fought and won a tremendous battle—one of the most decisive in history, by July 3rd, at Sadowa or Königgrätz. Austria's position as head of the Germanic Confederacy was lost. Why? Because readiness meant victory on one side, and unreadiness meant ruin on the other.

What happened in the next great war? France, early in 1870, was the military power of Europe *par excellence*. It had the traditions of the Grand Monarch and of Napoleon. Its military history and literature were magnificent, and its scientific aptitudes and *élan* and courage left nothing to be desired. The army was of the highest repute, and supposed to be fit to invade and ruin Germany forthwith. But it was soon obvious that in organisation, mobilisation, commissariat, guns, numbers of trained men, France was far inferior to Germany. Nor was it a nation in arms to anything like the same perfection of standard. Nevertheless, Lord Granville, our absurd Foreign Secretary, emitted oracles that were baseless only a few days before the war; according to our Official Dryasdusts, who are lavishly paid for promulgating error, not a cloud of war darkened the European sky. Our wiseacres had declared in 1866 that Austria must win, and it was said by able correspondents after the battles of Fredericksburg and Chancellorsville in 1862-3 that they had witnessed the fall of the United States. Yet the United States are now stronger by far than ever. Austria lost in 1866, and the Federals won ultimately in 1865. In spite of all the ineptitude of Granville, and the self-confidence of Lebœuf and the Emperor Napoleon III, Germany was not invaded. On the contrary, on August 4th three German armies were conveyed by nine railways to the frontier with mechanical accuracy, with 500,000 infantry, 50,000 cavalry, and 1,500 guns. I need not detail the victories of August 4th, 6th, 14th, 16th and 18th, and the surrender of MacMahon at Sedan, September 1st, and the investments of Strasburg, Metz and Paris.

Various efforts were made by 600,000 unprovisioned and improvised, untrained men, led by unskilled officers for the most part, who, as has been said over and over again in this room, never yet defeated an organised army. Don't rely upon the nonsense about the people springing up like dragons' teeth and biting the invader. If they spring up at all, they bite the politicians.

They destroyed the politicians by a Revolution, September 4th, and they burned the capital with fury after the war was over. Such was the ruin and disorder due to fools rushing into war without being ready, or counting the costs; and the Germans brought home an indemnity of £260,000,000, and kept Metz and Strasburg. Would it not have been better for the French to have listened to the advice which had been given to them only a few months before the war by the experts who were turned into derision in the Chamber of Deputies in Paris—to have spent £60,000,000 of money and a little attention and care and time, and then they would have kept the Germans eight months getting to Paris, if ever they got there at all? If there is any gentleman who disbelieves this theory, I wish he would say so in the discussion.

Here is Von Moltke's summary which every speaker on the necessity of national preparation for war should have on the tip of his tongue:

"Thus a war, carried on with such a vast expenditure of force on both sides, was brought to an end by incessant and restless energy, in the short space of seven months.

"Even in the first four weeks eight battles were fought, under which the French Empire crumbled, and the French army was swept from the field. Fresh forces, numerous, but incompetent, equalised the original numerical superiority of the Germans, and twelve more battles needed to be fought to safeguard the decisive siege of the enemy's capital.

"Twenty fortified places were taken, and not a single day passed on which there was not fighting somewhere, on a larger or smaller scale.

"The war cost the Germans heavy sacrifice; they lost 624 officers, 123,453 men, 1 colour, 6 guns.

"The total losses of the French were incalculable; in prisoners only they amounted to:—

In Germany	11,860 Officers	... 371,981 Men
In Paris	7,456 ,,	... 241,686 ,,
Disarmed in Switzerland	2,192 ,,	... 88,381 ,,
	21,508 ,,	... 702,048 ,,

"There were captured 107 colours and eagles, 1,915 field guns, 5,526 fortress guns.

"Strasburg and Metz, which had been alienated from the Fatherland in a time of weakness, were recovered, and the German Empire had risen anew."

Verily a striking contrast between the results of Readiness and of Fiddling! I need not give details of the miserable inefficiency of our own authorities in 1899. I need not refer to ancient as well as modern Empires. Look at the Mediterranean: "Thy shores were empires, changed in all save thee." Assyria, Greece, Rome, Carthage, where are they? "Thy waters washed them power when they were free and many a tyrant since."

A few years ago in this room, before the South African War, I listened to Councillor Bloch for an hour-and-a-half, and so did the chairman. It was a wonderful dreamy lecture, and a preliminary to more dreary foolery at the Hague, and he taught us with the utmost confidence that new weapons had made war impossible and that cavalry was useless, and bayonet attacks were perfectly inconceivable again. Several other gentlemen experts and prophets about the same time told us that we could never be engaged in war again which would require a greater force than we used in Egypt, 1882—an expeditionary force of about 40,000 to 60,000 men at most, and 10,000 cavalry. The *most*, mind you! They told us this in 1899, I assure you, and were applauded; I laughed at them and was reproved.

Now, when were ever such entrenchments in the whole history of the world as since 1899? Far more formidable than the ancient Roman entrenchments or the American entrenchments—as some of you have seen for yourselves. What about the Boer entrenchments at Paardeburg? And yet battles were won. I venture to say that you will not beat them by anything done by the Romans except, perhaps, the German great lines of Antoninus. Now we come to Manchuria. I wish you could see the pictures which were given me very kindly by the Japanese officers. If I could bring them here you would be perfectly amazed how any human being could have ever got across the Liao Yang and other entrenchments. And what occurred? Terrible battles and successful battles in spite of all the weapons and all the monstrous engineering feats. We were never to have a war again that would require more than 40,000 troops! But within two years, between Regulars, Militia, Volunteers and Colonials, more than 300,000 troops went to South Africa, and instead of 10,000 horses, you used up 400,000 horses and mules. Will you listen again to quacks like Granville and de Bloch after these dolesome experiences? Lest perchance led by political knavery you might have already forgotten and begun to revel in visions of a new millenium, came the Russo-Japanese war.

Fortunately we have Kuropatkin's work, and many other able French and German treatises for our guidance and to explain the quite unexpected collapse of the Colossus of the North at whose naval and military feet of clay both Germans and British had cowered—smashed to pieces they were forthwith by Japan. Why? Let Kuropatkin tell, he ought to know, and he groups the causes of defeat under three headings. Russia was unprepared. In the first group we find results of the defective national preparation for war and of the national circumstances of the period.

The sections of this group are:—

a. The absence of previous diplomatic arrangements such as those which enabled the Germans in 1870 to employ without delay their entire forces against France.
b. The faulty use of the fleet throughout the war.
c. The inferiority of the railway communications.
d. The internal disorders in Russia, which affected the spirit of the army.

For the first three of these defects, it may be noted, General Kuropatkin appears liable to at least some share of the blame, while as regards the fourth, he shows that the better spirit which animated his army at the end of the war was due partly to himself and partly to some of the very measures of which he elsewhere complains.

The second group comprises:—

a. The delay in mobilising the reinforcements.
b. The transfer to the reserve during the war of efficient soldiers who were still liable for colour service, while untrained elderly reservists were being sent to the front.

Let us now think of ourselves! Though you are far behind the requirements of your lofty destiny, there is time for recuperation. Though much is lost, all is not lost. Give up undue devotion to games and sports, worship intelligence and honour and self-sacrifice—gird your loins for the coming crisis. Pessimism is as unbecoming a true man as is effeminacy or looking at football. Stand in the old paths, see what are true paths and straight paths and walk therein.

There is no other remedy for individual or for national decay, but the true cult of the soul (*anima*) which is the body's guest, and of the body which is the host of the soul. Humanity in its essence changes never, age after age the same. Armies require plenty of men, plenty of food, plenty of ammunition and armaments for destruction and concentration of force by highly-cultivated brains. The principles of war are the same, whether Alexander or Cæsar or the Swede or Napoleon or Moltke or Roberts be the leader, the *anax-andron,* the king of men.

The British race has boundless resources. As I look at you, ladies and gentlemen, I revive the memories of the *Færie Queene,* in which the poet Spenser in the glorious day of Great Elizabeth, set forth in immortal imagery and with all the glamour of chivalry and romance, how to form the men and women of his race in all "godly discipline." I see before us once again his glorious heroine Britomart, and her splendid environment of brave knights and lovely dames. But, still more entrancing vision, behold Britannia herself again rising from her Imperial Ocean, shaking her dewy locks, trimming her invincible tresses, and once more about to kindle her undazzled gaze at the full radiance of the noontide sun. We are willing to follow Britannia—*ubique per mare et terras.*

Wherever Britannia leads, where glory and duty guide, we follow the brilliancy of her spear o'er land and wave.

Major W. G. CARLTON HALL, 19th (County of London) Battalion, The London Regiment (St. Pancras):—I should like just to say a few words, although I am not a person of any authority, such as Dr. Miller Maguire, who has spoken about the organisation of men and horses. There are one or two things which have often occurred to me as to the reason why a voluntarily enlisted force cannot, however much *esprit de corps* there may be amongst the members, ever be equal to a conscript force. One of the reasons is this: If a man joins a force like our Territorials he does not do it—although his object may be mainly patriotism—wholly from patriotism; but he wants to get something back. You can't blame the man. Practically the only thing he can get back is a little instruction in something he does not know much about; hence, you find the mounted branch of the Territorial Force is composed mainly of City clerks. They are men who never in private life have a chance of learning to ride, and think that joining the Force will be a good opportunity. I don't think that anyone will believe that a man who rides on an average for one fortnight during the year is likely to be such an efficient horseman as to be of much use in the field. They have the greatest enthusiasm. I do not profess myself to be a cavalry expert, as I have never had anything to do with mounted work; but I think I know a man who can ride when I see one. When one compares English yeomanry with the cavalry of Switzerland—a country which is not by nature given to horsemanship—one cannot but see that the fact that the men have to serve in some form or other, results in an extraordinary improvement in the cavalry, that is, so far as the men are concerned. The cavalry being raised compulsorily, and the main being enlisted for ten years, it is possible for the Government to supply him with a horse on a business-like footing, which enables him to keep that horse himself. The result is, that the Swiss cavalry are splendidly mounted; whereas the horses of such Yeomanry as I have seen are a positive disgrace, to say nothing of the fact that I believe if the whole of the Yeomanry were called up for training at one time, they would have to go four men on one horse. When one remembers that the splendidly mounted Swiss cavalry is mounted almost entirely on Irish-bred horses, and when one goes to Dublin in the Horse Show week and sees the town full of Italian officers buying horses for the Italian cavalry, one despairs of ever seeing anything in the way of a decently mounted cavalry in this country, which says it cannot get horses, and yet supplies cavalry to at least two other nations.

Mr. F. HUGH O'DONNELL, ex-M.P. :—I do not presume to come before this important meeting, which has so many claims to be considered the brains of the Army, as one knowing the *métier*; but it has occurred to me that there are some things which have come before my experience in the course of my special work which might be of use if laid before the keen minds which I have the honour to address. I have now been for nearly forty years a student and writer on foreign politics. As far back as 3rd June, 1876, I wrote the first article which appeared in England on the Bulgarian Insurrection. That was in the *Spectator*. I have also had the honour to write several articles on the Turkish Revolution in other reviews during the past six months. I have for a long time been a resident in foreign countries, engaged in the study of their local circumstances with a view to my particular profession. I have also been active in important organisations concerned with the electoral action of the masses in this country. We have not to deal with politics, but I have only to point out that a man who has been President of a popular organisation with 360 branches between Dundee and Bristol has had certain opportunities of studying the public mind of the masses of this country. Now, from all these points of view I wish to say a few words to this important meeting. As a student of foreign affairs, one who has devoted a trained and scientific attention to the circumstances of foreign countries, I wish to bear my emphatic testimony to the importance of universal military service from the point of view of the general well-being of the civil population. I could quote not one, but hundreds of testimonies, from University Rectors to factory owners, from Budapest to Cologne and Amsterdam—those who had universal service in their own country, and those who regretted that they had it not—and all these testimonies were unanimous upon the excellent results of taking hold of the young men of the country at what I may call the hobble-de-hoy age, when they were still mouldable and shapeable, and of imbuing them with habits of discipline and order and with the instincts of co-operation, plus the manly sense of being masters of their minds and muscles in the defence of their fatherland. Such a lesson given to these young lads—lumbering louts from the plough, lads who would be stunted artizans without a noble reminiscence if they lived in some of those factory towns referred to by Dr. Maguire in his magnificent address—would be of incalculable benefit, and mark them out as something superior to the corresponding men of nations in which no such noble service exists. And passing from that matter allow me to add one solitary warning from my experience of forty years of foreign politics, and that is to say that I am convinced that at no time in all the chequered annals of our mighty history was mighty danger so nearly impending to all you hold most dear as it is impending at this moment. I believe that in our Chairman we have an expert in the military affairs of the Balkan Peninsula. All that I know upon this and related subjects goes to confirm the view that within a few years, it may be within a few months, if you are not prepared to embark upon your ships greater armies than went with Wellington to the Peninsula, a sore strait and a dangerous strain will be put upon the British Empire beyond the seas. Furthermore, speaking as one who presumes to know something about the masses of this country—for the opinion of the masses are of more importance than mine—I would ask this highly-trained auditory to consider the question of military service from the point of view of the plain English common man in this democratic age. If you are to have an enthusiasm for universal military service that will keep in its strong grasp the hearts of the whole people, then you must have within your army larger openings and opportunities for the rise of simple merit than at present exist. I might say for myself that where we can get it, I am quite a believer in an aristocratic corps of officers; but you cannot get a universal Service Army in contemporary England on the basis of being governed by a purely aristocratic corps of officers. You must take account of that instinct which was appealed to in the days of the French Revolution, when the plainest French soldier was taught to believe that he might have a *baton de maréchal* in his knapsack. You must open the doors of the officer body to vastly larger contingents from the lower ranks. Again, there is a deep and a profound feeling throughout the masses of this country that Government and society do not place at the disposal of the existing officer body those opportunities and those obligations of scientific military education which are demanded in order to make the officer body a safe guide and trustee of the nation committed to its care and leadership amidst all the emergencies of the battlefield and the campaign. It is the conviction of the masses of this country that the educational system, which is at the disposal of the classes, willing to supply officers, is an educational system that is unworthy of your officer body and unworthy of the duties and the responsibilities which impend upon every soldier in an Empire like this. I cannot, upon this occasion, discuss or expound at any length these views; but I would ask you to believe this: that a large portion of the luke-warmness, and the indifference, and the anti-militaryism—there is no anti-militaryism in John Bull; give him his chance and he is a fighting animal—that the spurious anti-militaryism which rages throughout this country, is largely based upon the popular dissatisfaction with the manner in which the officer body is recruited and the manner in which the officer body is trained. In other countries, the bluest blood—take Germany, for example—does not dispense with the most scientific training. Even if your officer body desired to reach a scientific training equal to the German standard, it has not at its command the educational institutions which are demanded by such a necessity; and what is more, such is the blindness and stupidity with which even the existing opportunties are treated by the powers that be, that instead of encouraging the men and the Institutions who desire to put their whole heart into the work of military education, every kind of cold water is thrown upon the efforts of the most zealous of those teachers. Now all this has filtered down, long since, to the masses, and men out of the Army, rankers, and non-commissioned officers, have spread the story that there is too little difference made by the Government of this country between the scientific officer, who is endeavouring to make the Army the sword and buckler of the nation, and the mere sporting officer—a fine gallant fellow—who is very glad when he can pull off his uniform and put himself into the various garbs that are sacred to the prosecution of open-air amusements in this country. Until it is infinitely more worth the while of the British officer to be a great scientific officer than a great Polo player or a great Bridge player, you will fail to win the enthusiasm of the manhood of the common people for universal military service.

Mr. GEORGE LEYCESTER BORRADAILE :—It is with considerable diffidence that I rise to speak at all; but I was detailed by the Association to which I belong to take the place of someone very much better qualified to speak than myself during this discussion on the subject of the readiness of the Navy. I represent the Imperial Maritime League—a body which has devoted itself for the last year to endeavouring to rouse the people of this country to some sense of impending danger, with not a remarkable amount of success until within the last few weeks, when the question has become a burning one. Dr. Maguire carries us a great way by his statements and his history of the subject, and then he leaves us to draw our own conclusions. Of course, he had not the scope for going carefully into details as he went along, and that portion of his address which he devoted to the Navy was not sufficiently prolonged to enable him to drag in all the points. Now, one cardinal feature that differentiates this question of our defence at sea, or our supremacy at sea—I will not call it supremacy, because that, I think, is opposed in some measure—but the defence of these islands at sea, is that we live on sea-borne food and we carry on our industries by sea-borne material. Now, from the point of view of war, the defence of such a place as these islands, under modern conditions, has never been admitted. No war in the past gives us the smallest idea of what would happen under modern conditions in any war in the future. It has been laid down by Captain Mahan, of the United States Navy, that no mere commerce-destroying war in the past has succeeded, but has been more or less worrying; that is to say, that while a great deal of our commerce was being destroyed, we were still gaining in power at sea. But when you look into the details of what happened at the determination of one war—the war with the French, which ended in 1783—you find this : that though in the last year of the war, after a succession of defeats, the French had absolutely no fleet in being outside their harbours, I believe I am correct in saying not one solitary battleship, and our command was absolutely undisputed, no less than 842 of our merchant ships were captured by the French. That, I think, must give us pause. You must recollect that nine-tenths of our food at that date was grown here, both in meat and in corn. We have an exact reversal of the position now. Four-fifths of our food has to be brought to us. Now, in a period of profound peace, we have seen, in the last few weeks, the loaf rise somewhere in the neighbourhood of 8d. It was owing to speculation based on a shortage of the wheat crop. In the Crimean War, I believe the loaf was up to 1s. 3d. Now is there any plan anywhere—is there any department charged with the formation of a plan, which can ensure our food supply reaching us in sufficient quantities to prevent a revolution here and "stop the war" cry? Is there any department charged with such a plan, and being charged with that plan, does it not inevitably involve a very far higher margin over any other Power than we have at present? If you go, as I have, electioneering, and try and get at the minds of the people, you will find that in the heat of party cry—they absolutely decline to think, they simply have the emotions of a crowd—anything that is said by a Conservative is looked upon as being untrue by the Liberals, and everything said by a Liberal is derided and hooted by the Conservatives. This question is not a party question at all—it is a national question. You have to decide on the facts, apart from any question of party bias, as they present themselves to you, and it is your duty—it is the duty of the people of this country—to make themselves acquainted with the facts, disabusing their minds of all party bias. The alarm in this country is not panic—that is ridiculous. It is not panic at all. But is it not perfectly foolish of us to allow ourselves to be shouted down and accused of panic-mongering, and that sort of thing, when we demand what really is merely an essential margin of safety? Writers of every nation in the world—unprejudiced writers, I think you will admit—have said that the British Empire throughout its history has been the greatest instrument for good that the world has ever seen. We entered without any labour on our own part, into the fruits of the labour of those gentlemen who strenuously kept—at enormous personal cost—a hundred years ago, our flag flying and the cause of freedom on high. We enter into the fruits of their labours and we have to pass on unimpaired the heritage that has come to us. Are we, in the first place, equipping ourselves with a knowledge of the subject, first of all, to be able to argue the case fairly and equally with people who, at the present moment, disagree with us, largely from ignorance? Are we approaching the subject in the spirit of self-sacrifice? Or are we simply saying: "Ships cost money and we have got enough, and, at any rate, it will be very unpleasant to have to pay for any more"? Do we realise, in the very smallest degree, our obligations all over the world? Do we realise that, in the last month or two—certainly in the last three months—the most solemn treaty that was ever entered into by European Powers was torn up? That, again, shows the fact that might is right. Russia backed down in face of Germany because Russia could not fight. If we are given the choice some day soon between backing down in face of power because we are afraid of sticking up for something right, what shall we do? No doubt, our impulse would be to fight. No doubt it was the impulse of the Russian Government to fight; but better counsels prevailed. Then, but truly for the first time, the Union Jack will be trailed in the mud. It is for you now, it is for this audience—I do not mind saying it is for every man who has a headpiece on him at all, it is for every woman who has any love for her country at all—to make himself and herself masters of the subject and insist, whatever the needs of our poor people may be, whatever wrongs we feel ought to be righted in the body politic, that, first and foremost, no Government, of whatever complexion, shall allow this question of the Navy to be ever put into the background, but that it must be in the front; and these people, knowing its responsibilities and knowing its necessities, will insist that this great subject shall be properly dealt with, and dealt with purely and simply from the patriotic point of view.

Commander W. F. CABORNE, C.B., R.N.R. :—Dr. Miller Maguire has done me the honour of asking me to say a few words in this discussion, and it is with sincere pleasure that I do so, particularly after the admirable address, so full of great truths and so replete with genuine patriotism, to which we have just listened. It is absolutely certain that for the adequate defence of the Empire we require an overwhelmingly powerful and efficient Navy and a large and efficient Army, and that we cannot afford in any way to lean upon the broken reed of paper agreements and treaties, no matter how deliberately they may have been entered into and how binding they may appear to be. Only a short time ago a prominent Little Englander wrote a letter to *The Times,* in which he said that, as a commercial man, he should infinitely prefer the protection of recognised International Law to the protection afforded us by our Navy. By the courtesy of the editor, I was permitted to reply to that letter, and in pointing out the fallacy of the views expressed, I alluded to the recently torn-up Treaty of Berlin, mentioned by the last speaker, as an instance of the valuelessness of solemn international agreements. While upon this point, it will be within your recollection, Sir Thomas, that upon the occasion of a lecture in this Institution on "The Hague Conference and Naval War," in February of last year, four of us spoke in the debate, namely, yourself, Lord Ellenborough, the Marquis of Graham, and myself. We were, I think, in perfect agreement, not that International Law was a bad thing in itself, but rather that it was useless unless it could be backed up by necessary force. It was apparent to all of us that no law, however desirable and beneficent it may be, is effective unless it can be duly enforced, and the question naturally arose as to who would enforce so-called International Law. Well, we had the distinction, I may say the honour, of being subsequently held up to public opprobrium in a sixpenny monthly publication for the opinions we had expressed. We were told that we had the ethics of pirates, that we were ill-informed savages, and that it was to be hoped that we would be hanged from the yard-arm, and the sooner the better. However, notwithstanding this drastic condemnation, we still survive, and I trust we shall do so for some considerable time to come. The lecturer has spoken about the death of the Blue Water School, and by the term I understand him to mean the extreme section of that school. Now, personally, I was never a believer in the doctrine of the extremists, and failed to appreciate the view put forward by a very distinguished Statesman in the House of Commons on 11th May, 1905, that invasion of these island was impossible, even with our Army abroad and our main fleets absent, owing to the ubiquity of the naval forces that would remain. This theory was afterwards so much embroidered upon that it was asserted that not even a dinghy's crew could land without being discovered. The speech just cited was described by some of the newspapers as an epoch-making one; but, for my own part, I was under the impression that it was epoch-making in the wrong direction, and I think that the ideas then advanced are not very largely held to-day. My view of the Navy is this (it may be wrong, but it is my view): that it is not its duty to hang about our shores and to patrol our coasts, but rather is to seek out the enemy wherever he may be found, and the nearer his own country the better, and to fight him and beat him, and also to keep open our indispensable food and general trade routes. We also need, as the lecturer has pointed out, a large and efficient Army, not only to defend our outlying possessions and to follow up any blow that may be struck by the fleet, but also to prevent any landing on our shores, and it seems to me that this latter is its special duty and not that of the Navy. The necessity of properly defending the United Kingdom is impossible of exaggeration, for as the heart controls the members of the body, so do these islands control the other dominions and dependencies of the Crown; and if any overwhelming disaster should overtake the United Kingdom, which is its heart, then the British Empire—an empire of a magnitude and importance of which Rome in its palmiest days never dreamt—will go down like a house built of cards. Dr. Miller Maguire has remarked upon the way in which our young men give themselves over to sport, instead of doing something to qualify themselves to take part in the noblest of all duties, the defence of their country; and as one who lives in the vicinity of the Crystal Palace, I can fully confirm what he has said about the vast concourse of men of various descriptions who frantically rush to see twenty-two young men kick a ball about. It would appear that the time has come when their energies should be directed, even by compulsion, into a better and more patriotic channel. "What has always seemed to me to be the proper policy in regard to the defence of this country is to see that our force is sufficient not only to overcome the smallest number who might in any circumstances be thrown upon our shores, but that there should be so much additional strength as will compel the foreign Power to contemplate sending a larger force than 70,000, and therefore put it out of the question that they should come at all. The way to prevent invasion is to have, within limits, overwhelming force, such as would compel the invader, if he is to come at all—I am going to put it in a Irish way—to come with such force that he will not come." The foregoing admirable sentiments, with which we must all agree, are extracted from *The Times* report of a speech delivered by the late Sir Henry Campbell-Bannerman in the House of Commons on 11th May, 1905.

The Chairman (Major-General Sir T. Fraser):—It is getting late, and in my judicial capacity I am not in a position to discuss specially what has been said on this occasion. I think, in the first place, that you are very fortunate to have heard the remarks of Mr. Borradaile and Mr. O'Donnell, and Commander Caborne. They spoke from different points of view—all instructive. We have had the benefit, in Mr. O'Donnell's case, of great knowledge of Europe and European affairs. For my own part I can only say we are not now in as good a position as we were, for the defence of our great Empire, which occupies a fifth of the globe; has a population of four hundred or four hundred and fifty millions; and has grown a hundredfold in a hundred years. Our forces on land and sea are not sufficient to secure us entirely against all possible enemies. We have frontiers on land as long as the Equator, 25,000 miles that cannot be defended by the Navy, and where we march with nearly all the great military nations numbering one thousand millions; and we have 75,000 miles of unfrozen coasts, which have to be protected. I may tell you that in 1807, a century ago, the relative strength of our Navy, as compared with that of all other Navies, was about ten times as great as it is at present. The collective wealth of other nations tends more and more to exceed our own; thus, at the present moment, the United States have financial resources with which they can outbuild us at sea whenever they choose. In future it is possible that one of the great central Powers of Europe may have such financial resources, with its great increase of population, to render it very doubtful that we shall be able to maintain anything like the great position at sea that we have done in the past. Under those circumstances, I think it is very important that patriotism on shore should, as far as possible, relieve the Navy from the necessities of doing shore duty instead of defeating their enemies at sea, which has always heretofore been their policy. To do that I think you must follow the example of some States, small and great, and I will mention one. The Roumanian Government, at a cost of about £1,800,000—less than that of a single ironclad—maintains a very highly educated Army, which is trained for two years, and provides, when mobilised, some 550,000 men. That means that a million of men, on the principle of National Service, used in Europe in every direction and in Japan and elsewhere, could be trained and passed to the reserve at a cost of less than four millions—the cost of a couple of *Dreadnoughts.* I am one of those who think we must have the strongest possible Navy our resources permit, however much it costs us; there are, however, limits to these resources; but I say that the nation on shore will some day have to give their services where money fails, and thereby relieve the Navy for its legitimate work, while securing at home the land defence of the country by an efficient force, which we have not got now, such as the Roumanian Army is at this moment, and at a cost within our means. We may take it for granted that, with an Army alone we should lose our Empire by losing our sea communications; with a Navy alone we should lose it by attacks on the land along those immense frontiers where we are exposed, and where the Navy cannot directly help us. Under those circumstances, with the loss of the Empire and the wealth it secures us, we should not be able to maintain either a Navy or an Army, and must become a mediatised State or a subject one. It is very late, and I will follow the example that I impressed upon the lecturer, and will only, on your behalf and my own, thank him most heartily for the very brilliant and instructive discourse he has given us.

ARTILLERY SUPPORT OF INFANTRY.

By Major E. M. MOLYNEUX, D.S.O., 12th Cavalry
(Inspecting Officer, Imperial Service Troops).

Continued from November JOURNAL, p. 1470, and concluded.

I PROPOSE accordingly to discuss now the methods by which this inter-communication can be ensured.

II.

The practicable means at our disposal for inter-communication are of three kinds:—

1. Word of mouth.
2. Visual signalling.
3. Electric communication.

I.—The actual sending of an orderly with a message is, where considerable distances have to be dealt with, obviously the slowest of the three, and for some purposes quite out of the question; for example, for communicating the results of fire, and correction required, from an observing station to a battery in action, as the guns clearly cannot wait for an orderly to come and go between each shot, and if not incessantly observed and at once corrected, artillery fire is thrown away.

A chain of orderlies between the two points, to pass on messages by shouting to one another, is almost equally unsatisfactory; it is more uncertain, especially if heavy firing is going on all round, or a strong wind blowing, and not much quicker, if the message is of any length. Mounted orderlies cannot be ordinarily used from the firing line of infantry or its immediate vicinity, to depend for communication between guns, and to rely on infantry orderlies is to surrender the immense advantage of rapidity of transmission. It is hardly necessary to demonstrate that for an artillery officer in the firing line to attempt to control or direct the fire of his battery, perhaps a couple of miles away, by such means, would be futile. We may safely, I think, eliminate this method as inadequate to obtaining the fullest results of modern armament under all circumstances, where the distances are at all considerable.

II.—Visual signalling is the next method which I propose to consider. It has done us good service in the past, and is so very useful under some circumstances that its retention is essential. In situations where cable communication would be liable to be cut, there is nothing else which could well take its place. Throughout the South African War it was found to be indispensable; and, although it is easy enough to show that there are many purposes for which it cannot be compared to telephony, the conviction remains that the best results will be obtained by the use of both. On the Russian side visual signalling never found very much favour, though the value of telephones became more and more recognised as the war went on. The Japanese appear all along to have preferred telephones to any other method of supporting the infantry attack by artillery, both for direct communication between the two arms and for the correction of the fire of the batteries. Examples, however, are to be found of good results having been obtained by them by purely visual methods. The following is taken from an account of the battle of Vafangu. "Another battery, however, of which nothing was distinguishable beyond its momentary flashes, could not be located, and immediately became a source of extreme danger. The projectiles, which burst at a correct elevation, were fired in accordance with instructions signalled by flags worked far away on the neighbouring heights. In a few moments the 4th Russian battery had lost all its officers, and the guns of the other were obliged to cease fire."[1]

There are certain drawbacks in the use of visual signalling for the purposes under discussion, which render it imperative that it should be supplemented by electric methods. In India we see signalling under such exceptionally favourable conditions that we are a little apt to lose sight of the fact that signalling cannot give equally good results where such conditions are absent. Bright, clear sunshine, which may be relied on from sunrise to sunset, as a normal condition, in hot and cold seasons alike; atmosphere free from fog, as a general rule—results obtained under these conditions make us wonder why the system is not more highly thought of amongst the military nations of the continent. There are many countries—such, for instance, as England—where heliographic communication could not be depended on with any certainty for an hour at any time of the year, and where, during the less favourable seasons, days suitable for this form of signalling are exceptional; the same remarks apply, though to lesser extent, to flag signalling at any considerable distance. We cannot be certain that we shall not be called upon to campaign under such atmospheric conditions.

At the end of the Tirah campaign, Sir Power Palmer's elaborate scheme, to "round up" the Zakka Khel Afridis and their cattle in their winter grazing grounds, on the Kajurai Plain, near Peshawar, failed completely, owing to the day turning out unexpectedly dull and foggy, which prevented co-operation between the columns owing to total breakdown of signalling communication. The result was, instead of a success, the "regrettable incident," which included the death of Colonel

---

[1] General de Negrier: "Lessons of the Russo-Japanese War."

Haughton of the 36th Sikhs; even as I write, an expedition is on its way to inflict a punishment on the Zakka Khels, which might never have been necessary but for the failure of signalling in a country which, generally speaking, is as well suited to its use as any in the world. Useful as it undoubtedly is, visual signalling might form a rotten reed to depend upon alone.

Another weak point about signalling is, that it often has to be visible to the enemy, and can be read by him equally well. Those of us who were in South Africa will remember how amusingly this was illustrated in Natal during the siege of Ladysmith, and how the Boers could pick up our messages and mystify us by bogus ones. The sending of messages in secret cypher would entail a loss of time and a complexity which would be most prejudicial to the use of visual signalling for the particular purposes under consideration. For a signaller to stand up in the firing line or its vicinity, to signal back to the guns, might in any future engagement prove to be just as practically impossible as it was on the top of Spion Kop; and the answering signaller by the guns might, if seen—and it might easily happen that he would have to be seen from the front—"give away" the whole situation.

Signallers, again, have to devote their whole time to signalling, to be any real use; to cultivate their facility, they have to be almost lost as soldiers. They cannot be replaced by untrained men; they require a long and careful training. Consequently, in case of numerous casualties amongst them, especially if our army were "expanded" to many times its normal size in a great war, we are liable to be seriously hampered by lack of *personnel*. Good positions for signallers are not always obtainable; numerous trees, with absence of eminences, as so often in the plains of India, may make them almost useless in any particular locality.

All code signalling is necessarily slow, as compared with electricity. Abbreviations help matters somewhat; but for such purposes as may arise in the support of infantry by artillery, minute explanations may at any moment require to be signalled in elucidation of topography; under such circumstances, the slowness of visual signalling will be at once felt.

Finally, when the supreme moment has arrived, and the infantry have fixed bayonets, and are surging into the position, what comparison can there be between visual signalling at, say, a couple of miles, amidst dust and exploding shells, and the simple sentence on the telephone from an artillery officer lying just behind the firing line:—"Range and fuse as before, rapid fire," followed by the instantaneous "Cease fire," as the position is occupied not a hundred yards behind the dust clouds of our shrapnel?

It must be gathered from the above that I do not consider that the use of visual signalling alone will ever satisfactorily solve the problem of the support of infantry by artillery. I do not wish to decry visual signalling, which, under certain circumstances, is indispensable. I only wish to point out that for this particular purpose it must be supplemented by electricity—unless we are willing to incur the reproach conveyed in General de Negrier's warning to his own countrymen. I will now proceed to show why electricity is essential.

III.

I do not think it is necessary to discuss electricity in this connection otherwise than in reference to cable telephony. Other conditions being equal, telephony is obviously superior to telegraphy; and in short distances, the lightest possible field telephones give excellent results. Wireless telephony has not yet come, and neither it nor wireless telegraphy are likely to be sufficiently portable for this purpose; nor does it appear probable that the use of the air as a conductor of sound will be feasible under the conditions implied.

The weak point of cable telephony is, of course, the cable and its liability to damage. In practice, however, this disadvantage is less serious than would appear to be the case at first sight. The cables used by the Japanese in Manchuria were the lightest ever used in war, weighing, with insulation, only 7 pounds to the mile. They had a breaking strain of about 120 pounds, and cost only 16 shillings per mile. Similar cables are in use by the Austrian and American cavalries, to be laid out rapidly for tactical purposes, and then, on the conclusion of the action (if any) to be left lying, as not worth the trouble of picking up again.

Infantry are not likely to break the cable, if accustomed to it; for the particular purposes under consideration, it may be assumed that the cable would not be likely to be crossed by any heavy transport, none being likely to intervene between infantry and guns until the conclusion of the action. It is not liable to damage from wheels passing over it, unless caught by the metal rim of the wheel on the edge of a sharp flint; even then, being a three-strand cable, it is rare for all three strands to be cut. However, the safest rule to adopt in reference to telephone cables is to insist, with the utmost rigour, that anyone who, by any accident, breaks a cable should instantly repair it; this can be done in a few seconds (if the cable be laid slack, as it should be) by stripping the insulation from the broken ends of the wire and tying a knot, which can be easily done with the fingers. Such a cable can be laid through streams and wet grass, even if the insulation be frayed, without losing its power of transmitting. The Japanese adopted the method of sending a man along the course of the wire when laid to mark it with tiny coloured paper flags a few inches high, every 10 or 12 paces; these flags being pinned round the cable instead of planted in the ground where laid on growing crops, over bushes, etc. As this cable was no thicker than a fishing line, such a precaution was very useful in calling attention to the presence of the cable, and "ware wire" was at once passed back from front to rear on approaching it.

We are not bound to depend upon so frail a cable for war, though its cheapness may be a recommendation for practice in peace; there are more expensive cables made which are very much stronger without being excessively heavy. In any case, no matter what the disadvantages of cable telephony may be, we are practically forced to adopt it and to do all we can to neutralise its defects by ingenuity and training; for we cannot compass our ends by any other means, and we dare not fight an enemy provided with such means unless we place ourselves in an equally favourable position. The Russians are exceedingly conservative in all military ideas; and it may be assumed that they are aware of the disadvantages of "swapping horses when crossing a stream." Before the war, they had not thought much about telephony for this purpose; it was one of the many points of their military unpreparedness. Although it had all the disadvantages of a new and unfamiliar method, they found themselves compelled to take it up in earnest after Vafangu.

Victor Bulla's photographs of the later phases of the war, reproduced in the *Sphere* newspaper, show heavy box telephones in use by the Russians.

An account of the use of the telephone in the directing of the Russian artillery fire at Port Arthur will be found in the *Voïénnï Sbórnik* for March, 1905; it is interesting in the light of what we know of the still more extended use of the same agency by their opponents. Briefly stated, what happened was as follows:—On the 26th of February, 1904, the Japanese bombarded from the long range of ten miles, and from a direction in which they were invulnerable to the Russians, the direct fire of the heavy guns of the latter being masked. They had it all their own way on that occasion. But when they renewed the attack on 9th March, they were completely baffled by an unexpected move of their adversary. The Russians, from an observation station near the Liao-te-shan lighthouse, directed the high-angle fire of the battleships *Retvisan* and *Tsesarevitch* upon them with such accuracy—in spite of the unfamiliarity of the method—that the Japanese were forced to withdraw.

Apart from the liability of the cable to damage, telephony provides us with an almost ideal machinery for our purpose.

It is absolutely instantaneous, whilst even telegraphy has to be spelt out letter by letter. It is perfectly secret; only the staff officer at either end need know. In certain eventualities, this is invaluable. It cannot be read by the enemy, unless he gains access to the cable. No trained operators are required. In the Japanese Army a considerable percentage in every squadron and company are taught how to use telephones; there is no reason why every man should not know how to use the simple little instruments. It attracts no notice when in use; the operator can use it perfectly well when lying down behind a stone or tuft of grass. It is the nearest possible approach to an actual interview between two men, who can exchange question and answer with the ease and rapidity of ordinary conversation. It is exceedingly light and portable, if we accept the best patterns. The Ericsson instrument, in which the receiver-transmitter pulls out like a telescope, is probably the best military telephone yet invented; the whole thing is carried in a little leather case on the belt or slung over the shoulder, and is little heavier or bulkier than an ordinary field-glass. The lighter of the two patterns of this model weighs 3½ lbs., the heavier 5½ lbs. The batteries are, nevertheless, sufficiently powerful to still maintain perfectly audible conversation, even though 90 per cent. of the electric current leak out from the insulation being defective in an old and badly-damaged cable. They are cheap to buy, costing £3 10s., cheaper still to maintain; new cells, costing about 2s. 6d., being required about every three or four months, if the instruments are in constant use. As in the case of photography, time and experiment have resulted in reduction of weight, cost, and complexity to what appears to be now almost irreducible.

The Japanese found telephony stood the tests of extremes of climate; in their war with Russia they experienced intense heat, Arctic cold, drought, and deluges of rain. The instruments are constructed to withstand war conditions, and will remain in working order after a surprising amount of knocking about; but are not, of course, quite "fool-proof." They give a power of offensive action to concealed artillery, which must form a terrible weapon under favourable conditions.

An artillery officer, his presence utterly unsuspected, may be lying behind a bush in proximity to the enemy, with his instrument held to his mouth and ear. His battery may be a couple of miles away, screened from view and fire; but, provided they got their angle at starting, so as to get roughly on the enemy, the officer with the telephone can correct the fire of his gunners with as much ease as if he were with the battery in person, but able to observe from two miles nearer to the target.

I will assume that the intrinsic excellence of signalling and telephony, and the experiences of the greatest campaign that our generation has seen, have so far impressed us that we have given the necessary instruments in adequate amount to both infantry and artillery, and trained them to their use. On the assumption I will briefly sketch the procedure which would ordinarily be adopted by the artillery to support the infantry, the enemy having been located, and an attack having been determined on.

IV.

The cavalry having cleared the front and made ready for their new sphere of action on the flanks, place themselves in communication with the supreme commander by visual signalling—supplemented, probably, by telephony in the safer vicinity of the main army. Anything coming from them that can affect the action of either the infantry or artillery materially, to be also immediately communicated to both the latter. The infantry unit commanders, who have been warned that an attack will take place, and of the general position and disposition of the enemy, as far as known, place themselves in direct telephonic communication with the general, to whom they transmit any further information as it comes in from their own scouts or advanced parties. These latter transmit by signalling, telephony, or messengers, as may be found advisable; only what is material being re-transmitted to the general. The artillery commander, as soon as the general has formulated his plan of attack—during the preparation of which he will be close at hand to assist the general, if required, with his technical knowledge—should be the first person to whom the attack orders are communicated. So important is his part in the scheme, so intimately is his action bound up with the success or failure of the whole operation, that it should never occur that the orders should be issued until he has been through the whole plan with the general in person. The disposition of the artillery, and the intentions of the artillery commanders, in relation to the contemplated action of each portion of his command, should be communicated to each infantry commander. To my mind, the communication by the artillery commander of his dispositions and intentions is just as important as the converse process, which is that alone sanctioned by custom in our service. The infantry commander should know not only how many guns were supporting him, and how and where they were disposed, but also what precise line of action was intended for them; if any were being kept back in *position d'attente*, and, if so, in what direction and at what range, and in anticipation of what action on the part of the enemy.

Should it be intended—as we have every reason to anticipate that in future wars it frequently may have to be intended—that the artillery supporting his attack should fire from a concealed position by indirect method, then the proper place for the artillery officer directing this fire by telephone or signalling is with the officer commanding the infantry, who will thus remain through him in the most direct communication with the guns. There can, then, be no uncertainty in his mind whether the guns can give him their most rapid and powerful support at exactly the right moment, or not; he will also have no fears that he may be deprived of artillery at some highly critical moment, owing to the latter changing position in a well-meant endeavour to support him at closer ranges. The artillery officer, with the telephone in his hand, close behind him, would be a guarantee against the misunderstandings that have so often been the cause of the want of adequate artillery support in the past. Concerted action under the direction of one supreme commander, and not disjointed action by the initiative of local commanders being requisite for success, the local infantry commanders should also be in direct communication, preferably by telephone, with the supreme commander; the artillery commander, at the same spot, being similarly in direct communication with his scattered subordinates, who would keep him informed of all matters affecting not only themselves, but also the enemy, regarding the location and action of his artillery, and the effect of fire on him, whether caused by their own guns or not, as observed from either the vicinity of the firing line and transmitted to the battery by telephone or signalling, or observed directly from the observation station. The agency of electricity enables the commander to keep his finger on the pulse of the fight as nothing else can, as he is able to appreciate the situation for himself at any moment, without the lurking fear that some untoward incident may have occurred since he received his last report.

It may be objected that to carry this out, in the case of large forces, would be to turn the headquarters into a vast telephone exchange, the multiplicity of whose reports would introduce an element of confusion we might be better without. In Germany, moreover, we find a certain school which deprecates further progress in the perfecting of means of inter-communication, on the ground that the initiative of subordinates is cramped by their being too closely in touch with headquarters, instead of their action being unfettered. The contention, though plausible, is not really sound. The argument against any instrument or method, that it is too perfect for the man for whose use it is designed, and that he will therefore misuse it, is seldom tenable. It may be remembered that when the proposal was brought forward for the introduction of breech-loading cannon, General Airey's committee, to which the question had been referred, voted against the innovation, on the ground that so rapid loading a gun would be only a standing temptation to gunners to waste ammunition by a too free use of it. Exactly the same reasons were urged against the magazine rifle, and still more recently against the latest type of quick-firing artillery—all of which, happily for us, have been introduced. In Russia, many years ago, I remember meeting a reservist soldier, returning from his annual training. As we walked along, I questioned him about the sighting of his rifle—which was of the old pattern. He told me that his officers would not let the men use the leaf of the backsight, as being too complex for them to understand; they should fire a bit higher if the enemy was further away; and that, moreover, "the bayonet had been quite good enough for the soldier in the days of Souvaroff."

The objection in each case is the same; the correct method to obtain the highest fighting value out of a man is not to level down the potentialities of the weapon to his supposed intellectual capacity, but consists rather in giving him the most perfect weapon obtainable, and then taking care that his training is such as to get the utmost value out of so excellent an instrument.

The telephone may be misused—very probably, occasionally will be—on account of its very perfection as an instrument. But for every case where it is misused we may count upon many instances where it performs invaluable services.

It would be to take only a very narrow view of the question of the support of infantry by artillery, if we were to rest content with providing means of instantaneous communication between any infantry unit and the artillery told off for its own support. An army is an entity; the general is not bound to confine his support of an infantry attack to the artillery originally allotted to it. We must trust the general to make a skilful and discreet use of his means of communication; should he make foolish use of them, the proper course is not to reduce them, but to appoint a wiser commander. At Port Arthur, General Nogi had at times as many as forty telephones at work behind him. So far from confusion resulting in the great army under his direction, the opposite was the case. Infantry reports were taken by the staff told off for that purpose, and dealt with at once; artillery reports all coming to the artillery commander through the artillery staff officers detailed to take them. The staff dealt with minor details of movement and supply, noting all reports received and action taken in their staff diaries; the general being kept fully posted in all details of the progress of the fight, and all matters being brought to his notice that required his attention. The imposing array of telephones behind him had no terrors for him; quite the reverse.

The fact is, that the possession of a full knowledge of a situation does far more than merely assist a commander to frame his orders. It gives him a stiffening of moral fibre, due to his being able to substitute certain and decisive action for the hesitating and tentative tactics, which are the outcome of imperfect information and a nebulous situation. The same moral effect is very soon apparent in troops who know what they are expected to do, and their own place in the scheme. Certainty is the outcome of adequate corroboration of what is alleged. The method which I have outlined above ensures the opinions of individuals of one arm being tested by the technical knowledge of the other arm, both arms being inter-dependent.

The commander of a brigade attacking one portion of a hostile position has obtained a lodgment there; he is confident that, with the support of the artillery told off to him, his infantry can carry what is in front of him; this opinion is corroborated by the local artillery officer, who is with him, but in touch with the battery and observation station by telephone. Meanwhile, the general has received information, from cavalry or infantry sources of some other brigade, of the massing of hostile reserves in rear of the threatened point; this is instantly communicated by him to the artillery commander at his side. The latter at once takes appropriate measures for the artillery to co-operate in meeting this new condition, for dealing with which he can dispose of the fire of all under his command, and not only of those told off to support the infantry brigade in question.

Observation of the hostile artillery, their position, condition, objectives, and probable intentions being peculiarly the province of artillery, the artillery commander will be able, from the telephonic reports which have reached him from artillery on either side of the attacking brigade, to inform the general of the best routes, from the purely artillery standpoint, for his reserves to support the attacking brigade, and of the violence, volume, and direction of the artillery fire to which they may expect to be exposed in the process.

In the above imaginary description of the working of the method suggested, I have assumed that the forces engaged are large, and that the actual battle-field is far too extensive for the commanders to control by what they can themselves see of the operations. It is under such conditions—the conditions of the present and future—that the rigid division of labour and responsibility, on something of the lines indicated above, are essential for the avoidance of chaotic confusion; and the latter condition is the negation of orderly and scientific mutual support. A hundred years ago, the general, from the eminence which he had selected from which to look down upon the field of battle, could himself usually direct every movement of importance by means of well-mounted gallopers; could, consequently, ensure the support of one arm by another, until the retirement or pursuit commenced. But not Marlborough or Wellington could have controlled the battle-fields of Liao-yang or the Sha-ho, with their scores of miles of fighting front, otherwise than by seeing through the eyes of subordinates and acting on information from them. Nor, with armies of the size used in modern war, could these great commanders have dealt with the mass of information poured in on them otherwise than through their staff; and the work of the latter will be lightened beyond description, and rendered far more effective, by important news reaching them by instantaneous channels.

In one only of the engagements of the South African War, which it was my fortune to witness, did I see anything approaching the fullest use made of the powers of artillery for supporting an infantry attack. On that one occasion the field of battle was of such a kind as to enable the artillery to give the closest support without danger to the infantry otherwise than from the chance of defective fuses—as the enemy's position rose abruptly, and the whole engagement could be clearly seen in all its phases. The support was close and admirable, showing how well our artillery understand how to support infantry when conditions favour their being able fully to see what they are doing. This latter condition they can never count on with any certainty in the future; they must, consequently, be trained to see through the eyes of others, and equipped for it.

I deduce three requirements from the above, to obtain the fullest results in the co-operation of artillery in supporting an infantry attack :—

1. The artillery and infantry alike must be better equipped than at present for inter-communication.
2. The procedure to be adopted, when artillery are supporting attacking infantry, must be more clearly defined, in regard to the duties and responsibilities of the staff of each arm.
3. Certain modifications in the training of artillery staff and *personnel* must follow the introduction of a more strict allotment of duties and responsibilities in regard to co-operation with infantry. The same applies to infantry in regard to their relations with artillery, so far as staff duties are concerned.

Beyond such modifications as have been indicated above, it appears to me that it would not be wise to go. That we require an adequate supply of the best mechanical means for electric inter-communication, in addition to our excellent signallers, can hardly be gainsaid. That we have not yet been given such equipment, is equally patent. Until this has been done, training of the kind proposed, which depends upon the possession of such materials, naturally cannot be carried out; nor can the precise allotment of duties and responsibilities in the directing staff in action, so necessary for the avoidance of confusion, be more than a pious aspiration until maintenance of touch with all units by instantaneous methods is made possible. But we cannot attempt to indicate a normal procedure otherwise than in the most general terms, for the support of infantry by artillery fire, though convinced that such support would be rendered more certain and more powerful by the improvements in *matériel,* training, and organisation advocated. "For the attainment of superiority of fire, no fixed rules can be laid down. . . . It is impossible to fight battles in accordance with a sealed pattern. Even the formations in which the troops approach the enemy or occupy a position must vary with the circumstances, and in like manner there can be no normal procedure for the combination of rifle and artillery fire."[1]

---

[1] "Combined Training, 1905," Sec. 105 (2).

THE JAPANESE ARMY IN 1908.

(Translated by permission of the Minister of War from the *Revue Militaire des Armées Etrangères.*)

Continued from November JOURNAL, p. 1499, and concluded.

CHAPTER IV.

ORGANISATION OF THE JAPANESE ARMY IN TIME OF WAR.

On a war footing the Japanese Army comprises:—

a. The mobilised active army.
b. The depôt troops.
c. The reserve army, or *Kobi* force.

The mobilised active army (*a*) consists of:—

1. The nineteen divisions of the army (18 line divisions and the guard), each division reinforced by its reserve brigade.
2. Two independent brigades of cavalry.
3. Three independent brigades of field artillery.
4. The mountain artillery.
5. The heavy artillery.
6. The line of communication (technical) troops.
7. The field gendarmerie.

A.—The Mobilised Active Army.

As to 1. The composition of a mobilised Japanese division is as follows:—

The headquarters, comprising the general (divisional) staff, and the "Adjutantur."

Two infantry brigades, each of 2 regiments of 3 battalions. The effective strength of a regiment is 3,145 of all ranks; that of the two brigades, 12,618.

A regiment of cavalry of 3 squadrons (435 sabres).

A regiment of field artillery of 2 groups, each of 3 batteries of 6 guns and 6 wagons (1,106 men and 1,017 horses). Each regiment has an ammunition column of 27 wagons (one-third carrying high explosive shell).

A battalion of engineers of 3 companies (784 men).

A bridging train carrying 130 to 165 feet of bridge.

Four batteries of machine guns (one to each infantry regiment).

A sanitary corps.

A telegraph section.

Eight divisional ammunition columns (4 infantry, 4 artillery). The infantry columns have 60 carriages, the artillery columns 46 carriages.

Four ration columns, each carrying one day's supplies for the division.

Four or six field hospitals, and

A mobile remount depôt.

The effective total of a division amounts to 18,875 men (about 15,000 combatants), 4,938 horses, and 1,765 carriages.

Each division is followed into the field by a brigade of the *Kobi* Army. In the late war the *Kobi* brigades were mixed bodies, composed of 2 regiments of 2 battalions, a group of field artillery batteries, etc.[1] The tendency in Japan is not to count too much, for field operations, on the reserve units of cavalry and artillery.[2] It is probable that in future the *Kobi* brigades, following the active (first line) divisions, will consist of infantry only. On the other hand, a recent order has increased the strength of *Kobi* infantry regiments from two battalions to three.

The mobilised divisions, including their *Kobi* brigades, have each a total effective strength of about 25,000 men (say 20,000 to 21,000 combatants).

2. The two brigades of independent cavalry consist each of 2 regiments of 4 squadrons, and a battery of 8 machine guns. The total strength of a brigade amounts to about 1,650 men and 1,680 horses. The two brigades would, therefore, be about 3,300 men and 3,360 horses.

3. The three independent brigades of field artillery each consists of two regiments. A regiment contains 2 groups of 3 batteries, each battery of 6 guns and 6 wagons, and also a regimental ammunition column of 27 wagons (of which 9 contain high explosive shell). The effective strength of a regiment is 1,106 men, 1,017 horses, 36 guns, 63 wagons, and 120 other carriages.

4. The mountain artillery consists of only three (independent) battalions, each of 3 batteries, altogether about 1,800 men and 54 guns. The units of mountain artillery would be distributed among the armies operating in hilly country.

5. The units of heavy artillery mobilise the following for the field army :—

a. Four regiments of heavy field artillery, each of 2 battalions (or groups) of 3 companies (or batteries) of 4 guns. One of the groups in each regiment will be armed with 10·5-cm. (4·13-inch) guns, the others with 12-cm. (4·62-inch) or 15-cm. (5·90-inch) howitzers. Total strength, about 3,000 men. The exact number of heavy field guns to be attached to the different armies in the field is not known. At the last grand manœuvres two groups of heavy batteries were allotted to each army (composed of two divisions). One group in each case consisted of three batteries of four 12-cm. (4·62-inch) howitzers, the other had a battery of 10·5-cm. (4·13-inch) guns, and two batteries of 15-cm. (5·90-inch) howitzers.

---

[1] The Translator has always understood that the *Kobi* brigades attached to divisions during the late war were usually 8 battalions strong, and sometimes stronger.

[2] This is understood to mean that the reserve units of cavalry and artillery were not found very reliable for fighting in the first line, though they were probably sufficiently efficient for service on the communications.

b. One or more siege trains of unknown composition. These siege trains will be manned by the two independent regiments of heavy artillery (the 3rd and 4th Regiments of Yura and Hoioshima). The strength in men of the siege trains may amount to 3,000 of all ranks, and they are provided with horses in peace as well as in war.

c. About two independent battalions of heavy artillery for manning the guns of fortified points, military posts, etc. (works of semi-permanent type?). They may amount to about 1,200 men.

6. *The Line of Communication Troops*.—These troops in peace time constitute a brigade. On mobilisation they provide:

a. The railway troops. It is fully realised that it is of great importance to push on lines of railways to within a few stages of the front, keeping pace with the troops as they advance. The *Hoju* will furnish the necessary number of men accustomed to earthwork to reinforce the three battalions existing in peace time.

b. Telegraph troops. In peace there is one battalion of five companies. In war the telegraphic communications are extraordinarily developed in the Japanese Army.

c. Balloonists. There is one balloon company of four sections. Eventually there is to be a company to each army.

d. Search-light detachments.

e. Bridging trains. The *Army* bridging equipment is constructed to carry the heaviest carriages of the heavy field artillery, for which the old divisional equipment was not sufficiently strong. The boats are larger and draw more water than those of the divisional trains. Each army in the field is to have 300 metres (nearly 1,000 feet) of bridging. The divisional equipment has at the same time been reduced from 144 metres (475 feet) to 50 metres (165 feet).

The total strength of the special line of communication troops may be estimated at about 10,000. To these must be added the troops required for the protection of the roads and railways, convoy work, etc. It is probable that at the beginning of a war four or five battalions to each army would suffice; eventually, say, twenty battalions, or about 20,000 men.

7. The Gendarmerie in the field would amount to about 4,000 men.

The total strength of the Army after mobilisation would accordingly be, in round numbers:—

	Men.	*Horses.*
19 active (first line) divisions, followed by 19 reserve brigades	475,000	100,000
2 brigades of independent cavalry	3,300	3,300
3 independent brigades of field artillery	6,600	6,100
3 battalions of mountain artillery	1,800	1,000
4 regiments of heavy field artillery	3,000	3,000
2 (?) siege trains	3,000	1,500
2 independent battalions of heavy artillery	1,200	——
Special (technical) line of communication troops	10,000	2,000
Troops protecting lines of communication	20,000[1]	?
Gendarmerie in the field	4,000	2,000
	527,900	118,900

To these must be added:—

	Men.
22 battalions of heavy artillery ...	10,800
Formosa Division	15,000
Tsushima Militia	1,500
Troops in Saghalien	1,500
Railway Guards in Manchuria ...	10,000
Pechili Brigade	6,000

Say 45,000 men and about 6,000 horses, which brings the grand total of the Army to about 570,000 men and 125,000 horses.[2]

Grouping of the Higher Units.—Japan has not yet adopted an organisation by army corps. The divisions are grouped directly into armies, the number of divisions in an army being variable. The Commanders-in-Chief of the armies are appointed by the Emperor from among the Marshals and Lieut.-Generals.

---

[1] At the beginning of the war the total strength of troops for protecting the communications would probably amount to 80,000 or 100,000 men. They would naturally be provided by the *Kobi* army.—*Trans.*

[2] I have taken some slight liberties with the figures in the original, as there is at least one obvious misprint. The totals are practically unaffected, but if the full number of troops required for the communications be included, the grand total will amount to about 650,000 men and 150,000 horses.—*Trans.*

An army comprises:—

1. The Headquarter Staff, consisting of the General Staff properly so-called, and the Adjutantur. The headquarters of an army numbers 62 officers altogether, including civil officers, interpreters, etc. To each army is appointed a Commandant of Communications with his staff.
2. A variable number of divisions, followed by a corresponding number of reserve brigades.
3. Independent cavalry or independent field artillery, according to circumstances.
4. Heavy field artillery or mountain artillery, according to circumstances.
5. Siege train, if and when required.
6. A railway battalion, a telegraph company, and a wireless telegraphic detachment.
7. Search-light detachments.
8. A balloon section.
9. An army bridging train.
10. Troops for the protection of the communications.

The supreme command of the Army, as of the Navy, in war as well as in peace, is in the hands of the Emperor. The Supreme Council of peace time becomes in war the Superior Military Council. A new power also comes into play: the Imperial Headquarters Staff, in which are conjoined, under the orders of the Emperor, the Chief of the General Staff of the Army, the Naval Chief of the Staff, and a limited number of their subordinates. To mark the fact that it is the Emperor who exercises the chief command of the Army, even during operations in the field, the actual command of the armies in Manchuria during the late war was given to Marshal Oyama, Chief of the Staff to the Emperor, ordering and acting in the name of the Emperor himself, and having under his own orders a Deputy Chief of the Staff, General Kodama.

B.—Depôt Troops.

The units of the mobilised army are kept up to strength by corresponding units of depôt troops, each unit in the field having a depôt unit made up of the men left behind on mobilisation, the surplus reservists, the men called up for training, etc. In principle there is a depôt battalion to each infantry regiment, a squadron to each regiment of cavalry, a battery to each regiment of artillery, a company to each battalion of engineers and the train.

The depôt troops ought therefore to consist of:—

Infantry, 76 depôt battalions;
Cavalry, 23 depôt squadrons;
Field artillery, 25 depôt batteries;
Engineers, 19 depôt companies;
Train, 19 depôt companies.

Besides which there are the depôt units of the heavy and mountain artillery, etc. The actual strength of all these depôts is very uncertain. At the end of the late war some depôt battalions were actually stronger in numbers than the regiment in the field to which they belonged.

C.—Army of Reserve, or Kobi Army.

It is difficult to estimate the strength of this force. The units are mobilised (like those of the first line) at the centres of regimental and divisional districts by means of the ten available annual classes of the *Kobi.*

Theoretically the *Kobi* army ought to consist of :—

72 regiments of infantry of 3 battalions.
36 squadrons (18 regiments of 2 squadrons).
18 regiments of field artillery of 4 batteries.
18 battalions of engineers.
18 train battalions.

We know that each division is followed into the field by a *Kobi* infantry brigade. What one does not precisely know is whether the units composing these brigades are taken from the 72 regiments, 36 squadrons, etc., enumerated above, or whether they are *in addition* to them.[1] Further, there is no information as to whether Japan would be able to find the horses required for the cavalry and artillery of the *Kobi* army.

With regard to *matériel,* however, it is certain that Japan has sufficient reserves of guns and rifles. These are, so far, of patterns anterior to the latest models, but they are of the same calibres and fire the same ammunition.

The *Kobi* troops can be detailed to garrison fortified places, to guard the coast line, or for the protection of the lines of communication. They can also be employed in active operations along with the first line.

The effective strength of the *Kobi* troops should be somewhere between 200,000 and 250,000 men, if we deduct from the total the brigades which follow the first line troops into the field. But if these brigades are not to be deducted, the total strength would amount to between 350,000 and 400,000.

We can now say, contenting ourselves of course with approximate figures, that the war strength of the Japanese Army immediately after mobilisation would amount to between 970,000 and 1,200,000 men, while the requirements of the Army in the matter of horses would be from 150,000 to 170,000.

We have seen also in the chapter relating to recruitment that at the present time Japan can count on upwards of 700,000 trained men—a number fully sufficient to mobilise the field army. The numerous annual classes of untrained[2] men would fill up the depôts and the units of the *Kobi* army, and would, after some months, be able to take their place in the ranks.[1] We have also seen that when the new regulation has had time to take full effect, Japan will be able to dispose of 1,628,000 trained men, of whom—

---

[1] *See* Translator's Note at end of this chapter.

[2] The writer evidently means *partially trained,* of whom there will be 780,000 available. *See* chapter on Recruiting.—*Trans.*

742,000 will belong to the Active Army.
780,000 to the *Kobi.*
115,000 to the *Kokeumin* (1st part).

The Japanese have, then, even at present, the men they require, and every year the reserves will approach nearer to the full totals.

TRANSLATOR'S NOTE TO CHAPTER IV.

Strength of the Kobi Army in Units.

The writer says: "Theoretically, the *Kobi* army ought to consist of 72 regiments of infantry, 36 squadrons, 18 regiments of field artillery, etc.," and adds: "We know that each division is followed into the field by a *Kobi* infantry brigade; what one does not precisely know is, whether the units composing these brigades are taken from the 72 regiments, etc. . . . or whether they are in addition to them."

In the first place, it seems obvious that "theoretically" there should be not less than 76 regiments of *Kobi* infantry, 38 squadrons of cavalry, 19 artillery regiments, etc., and not as stated. That is to say, the units of the Guard Division should have their corresponding *Kobi* units as well as those of the 18 line divisions. It is highly probable that these Guard *Kobi* units already exist, for if they do not, in what regiments do the men of the Guard perform their *Kobi* service? In the German Army, on which that of Japan is modelled, there is a *Landwehr* of the Guard as much as of any other part of the Army. Further, the writer has told us that the Japanese General Staff is anxious to produce a *Kobi* army which shall be the exact counterpart of the first line, both as to the number of units and in the strength of trained men available. And this is quite in the spirit of the modern system of military organisation, which attaches much more importance to the second line than was the case thirty years ago. If, therefore, for some reason or other the Japanese Guard has no corresponding *Kobi* division, we may be sure that one will be created as soon as circumstances permit; and not only this, but also *Kobi* units corresponding to the regiments forming the brigades of independent cavalry and artillery, the regiments and groups of heavy batteries and mountain guns, so far as these may now be wanting. Doubtless, also, every effort will be made to bring to complete efficiency the *Kobi* cavalry and artillery, which did not, we understand, give entire satisfaction during the late war.

---

[1] As the *Kobi* will possess about 780,000 fully-trained soldiers who have passed through the first term, its units will not require filling up with partially-trained men. The latter, as in the case of the first line, will go to the depôts and make good the waste of war.

Now, with regard to the point on which the writer expresses a doubt, viz., whether the units composing the brigades which follow the first line divisions into the field may not perhaps be additional to the theoretical strength of the *Kobi* army. The doubt has probably arisen from the fact that the long term of *Kobi* service produces, or at least will produce, such large numbers of men that it would apparently be possible not only to form as many *Kobi* units as there are first line units, but a good many more. If such a surplus of men exists, or will exist, when the new law has taken effect, the Japanese General Staff will doubtless know how to utilise it to the best advantage. But it is pretty safe to assume that, for financial reasons, if for no other, the number of units in the *Kobi* army is not intended to be in excess of that of units of the first line. Consequently, if the first line divisions in the field are to be reinforced, as heretofore, by *Kobi* brigades, about half of the whole *Kobi* army will be thus absorbed, leaving the other half for the protection of the lines of communication and similar duties.

It has, however, been suggested, in the Note to Chapter I., that the brigades which reinforce the first line divisions will be formed in future from the surplus first line reservists, as is understood to be now the plan in Germany. If this is the case, we may expect to see in the next war entire divisions of *Kobi* troops taking the field alongside of the first line divisions. In this connection, it should be remembered that divisions of *Kobi* troops were actually formed in Japan during the late war, and were sent to the front, where they did good service.

On the Russian side, also, reserve troops were employed in very large numbers, and on a perfect equality with the first line. The tendency of the present day is to make more and more use of reserve troops in the field, and to regard them as equal in fighting value to the first line troops. This is not so surprising when one reflects that these troops are composed of *fully-trained* and disciplined soldiers in the very prime of life, and that a very few weeks of embodiment will bring units so formed to a high state of efficiency.

The translator's rough estimate of the probable strength of the Japanese field army in the near future would be: 19 first line divisions of three brigades, with independent cavalry and artillery, etc., 500,000 men,[1] and 19 *Kobi* divisions of two brigades, with independent auxiliary arms, 380,000 men; total, 880,000, of whom perhaps 120,000 to 130,000 might be required for the protection of the lines of communication and bases, leaving 650,000, divided into four or five armies, for the front, while there would be ample reserves at home for keeping all the troops in the field up to full strength. And this out of a total peace establishment of 220,000 to 250,000 men!

---

[1] These figures include non-combatants (about 15 per cent.).

RASPLATA.

("THE RECKONING.")

By Commander VLADIMIR SEMENOFF, Imperial Russian Navy.

Translated, by permission of the Author, by L. A. B.

Continued from November JOURNAL, p. 1491.

CHAPTER X

REVULSION IN THE SPIRIT OF THE SQUADRON—THE BEGINNING OF THE END OF THE FORTRESS—ANOTHER MYSTERIOUS INCIDENT—OUR LAST DAYS IN PORT ARTHUR.

IT was quite curious to note the revulsion that took place in the general feeling afloat during the next few days. I have repeatedly noticed such changes during the war, but cannot explain them. At first the masses do not believe in the intentions their leaders have openly avowed. And this notwithstanding that the latter had never given the slightest cause for suspecting the honesty of their intentions. The men ought, therefore, to believe them. Then there is a sudden revulsion. These same people are now as firmly persuaded that their leaders have this or that honest intention, although it has never been expressed and only presumed. How is this? It is a psychological riddle. Savants may solve it—or perhaps the spiritists? Who can tell?

No more grandiloquent orders were issued announcing the resumption of the offensive, with simultaneous appeals to the Heavenly Hosts. No sensational rumours were spread in the town. The clerks who were sent to the Admiral's office did not bring back bits of news confided to them by some "very reliable people"; yet there was something in the air.

In the mess I was once more treated as a messmate. No one held aloof from me, but all were ready to hear my advice or my views on this or that. "On deck," that is, on duty, my orders were no longer merely formally executed, but in the manner I was always anxious to see—that is, with zeal and intelligence.

Whence came this change in our relations? The fact that I was their superior had only quite recently separated me from my messmates like a solid wall. Why did this no longer interfere with our familiar intercourse? Who had pulled down this wall?

It is true some of the battleships had got back a portion of their 6-inch guns, which they had lent to the land forts. But it had always been promised that these guns would only remain on shore so long as their ships were laid up for repairs, and that they would be returned for certain. That was not the whole reason. No; I repeat, there was something in the air.

What now followed proved that my deductions were correct. About this time Admiral Vityeft received orders to proceed to Vladivostok with the squadron. This categorical order came direct from His Majesty. It left absolutely no doubt as to its meaning. How unlike the orders we generally received from the Viceroy! In these there was always some saving clause to cover their author in the event of the enterprise failing. The gentlemen who admire Admiral Alexeieff and who defend his actions before the war and during the war, pretend that he had repeatedly "categorically" demanded from Admiral Vityeft "decisive" steps.

I should like to submit this to the reader's judgment.

The most "definite, categorical" order from the Viceroy was brought to Port Arthur on 3rd July by the destroyer *Lieutenant Burakoff* (even his defenders admit that). It ended textually thus: "Keep before your eyes the fact that the squadron can only remain in Port Arthur as long as it is safe there. In the other eventuality, go to sea in good time *and proceed, without engaging in battle, if this be possible, to Vladivostok*."[1]

Can these "directions" be called a categorical demand for decisive steps? There was not a word in this of the possibility of defeat, and this was both a safeguard for the Viceroy, who issued the order, and a trap for the one who was to execute it. The manner in which the phrase "if this be possible" is introduced is particularly clever. What does it refer to?—the battle which is to be avoided or the voyage to Vladivostok?

On 7th August one could well say: "This is the beginning of the end." On that day Port Arthur itself was bombarded for the first time from the land side. The bombardment commenced at 11.35 a.m. From the shell which did not burst we made out that a battery of 4.7-inch guns was at work. The Japanese had apparently profited by the experience of the Boer War. Until the regular siege artillery arrived, they took ships' guns of that calibre and mounted them for field service.[2] The

---

[1] *Ruskaya Starina*, April and May, 1907.—"The Squadron of Port Arthur before Its End," by Bayaylomer.

[2] It would be interesting to find out whether these mountings were extemporised or had already been prepared before the war.

Japanese fire was not continuous, but in series of seven or eight. Between these they paused. The first series fell altogether in the main street of the old city, near the Port Hospital; the second fell more to the westward, that is, on the quay of the commercial port. It destroyed the coal which was stacked there. The third series fell on the open place in front of the Admiral's landing-steps, a little to the westward of the place where the *Tsesarevitch* lay alongside. We saw that she had been hit. Luckily, only one of the shells was well placed. It destroyed the wireless office on board. The operator, a torpedo-machinist, was killed as he was sending a message. The admiral commanding, Rear-Admiral Vityeft, was slightly wounded in the leg by a splinter. About 1 p.m. the fire was directed towards the entrance. As before, the Japanese fired series of seven or eight guns. These series were apparently laid for successive points from south to north.

I say it quite frankly, when I saw from our bridge that the Japanese shell, by the way they pitched, followed a regular course moving from the southward of us towards the berths of the cruisers, my heart felt heavy. Heavy, not alarmed. The chances of war decree that not every mine hits a ship, nor every splinter a forehead. A bombardment is a game of chance, in which one stakes one's life. The chances of losing one's life at a bombardment are much less than those of a particular number turning up at roulette. But the novice at this game is excited at the idea that he might possibly win enough on one stake to set him up for life. Similarly in war, everybody in his first battle believes himself to be the predestined victim of the first shot. Later on this passes away. The game becomes a real game.

On 7th August our officers, as well as the men, watched this game with equal eagerness, although it was forbidden to come on deck to look on at the bombardment.

"They fire well and, above all, systematically," the gunnery lieutenant declared in a dogmatising manner, and directed his binoculars at the spot where the shells pitched.

"Oh, this series is evidently passing over us! Look! Do you see?"

One shot had gone wide and struck far on our right. Another hit somewhat nearer; a third off the starboard beam.

"The devil! Where will the next one pitch?"

For some seconds there was the silence of death (just as round the roulette table whilst the little ball is skipping over the ribs on the revolving disc). The shell strikes the water and bursts. It was on the port beam, and splinters rained against the ship side and over the deck.

"No hit, but nearly! Good luck this time!" people were calling out all round. This was said with an air of utter indifference. It even sounded a little like mockery at the enemy's failure, at the fate which somehow had not reached us.

Everyone felt relieved, like a man who has been pitched overboard, head first, and who suddenly comes to the surface and draws a deep breath.

The following shots of this series fell to the left at increasing distances.

The captain came up to me and mentioned, in an irritated voice, that the flagship had now made the signal for the second time—" Don't keep more men on deck than necessary," and that we seemed to be having a regular bazaar going on on the upper deck. He knows well enough what drives the men up from below. These men, who have been " proved in the fire " long ago, can stand this game easier in the open. They want to be able to see and hear the shell, they can't stand remaining between decks without any occupation and waiting for the next shell to knock them over.

" Can't you devise something ? " the captain asked in a more gracious tone. " Don't you know of some occupation for the men ? "

A happy thought strikes me. The cable deck is just now the best protected space. A lecture might be held there for the ship's company. Sub-lieutenant Sh——— is a talented lecturer, he has already procured the crew many a happy half hour during the monotony of the siege by his talent. He must sit down there and recite " The Fair of Sorotchnisk."

The news of this spread all over the ship. The upper deck quickly became empty. Salvoes of laughter soon came up the forecastle hatch. They sound strange alongside the metallic buzzing of the enemy's shell and the dull roar of our guns replying to them.

I went down two or three times. Upon my word, it was really very jolly there.

Whilst watching this bombardment I observed something which was very satisfactory for us. The Japanese made very good practice, but their fuzes were bad. I carefully watched ten series, and noted the shell which did not burst. The shell all struck on land, that is, on solid ground. None the less thirty-two out of seventy-six did not burst.[1]

The bombardment lasted all day. The guns of our land forts and of the battleships replied, but this infernal little Japanese battery was so well hidden that we never managed to destroy it.

At seven in the evening it came on to rain. Soon it was coming down hard; this lasted till 11 p.m., with few interruptions.

Just before sunset the Japanese concentrated their fire on the right centre of our land front and then delivered a very determined attack. They probably thought they could turn the bad weather to account. At first we only heard single rifle shots. Soon it turned into a continuous rattle. The forts worked their searchlights at the same time and fired star shell.

---

[1] The Japanese removed this defect during the course of the war. Their shell burst brilliantly afterwards. (Compare "The Battle of Tsushima.")

The same evening, as we were lying on guard in the entrance, we observed a mysterious event, which was never cleared up subsequently.

About 11.25 p.m. we noticed out to sea to the south-east, about 8 or 10 miles off, a faint light, which rapidly grew to a big flame surmounted by clouds of smoke. It was evidently a ship on fire. We were keeping a sharp look-out all round, in hopes of getting some clue as to what was going on. Suddenly a bright light flashed up, a good way to the right of the fire, bearing almost south, and a few seconds later we heard a dull detonation as of an explosion. The whole thing was enacted in a few moments, but was observed simultaneously by several people. Later we could see nothing in that direction. Darkness and silence reigned there. On the other hand, the fire raging to the south-east increased rapidly. The unknown vessel burnt so mightily that even the clouds above it turned blood-red. Perhaps it was still moving by its own means, perhaps the tide was taking it along, but the distance became less and less.

Shortly before midnight we saw a new explosion, this time much nearer to the burning ship.

About 12.30 the brilliantly illuminated foremast of the ship was taken by our Barr and Stroud rangefinder. The distance was 50 cables (5 miles). With the glass one could distinctly make out the ship's side glowing red. Along it a row of intensely bright spots were visible. These were evidently the scuttles out of which the flames were bursting from the interior.

The burning ship did not keep on a straight course, but turned sometimes to starboard and sometimes to port. Sometimes we saw her broadside on, sometimes she turned her bow or her stern towards us. For the seaman this was a sign that invisible friends were surrounding the ship, trying to take her in tow. Soon after 1 a.m. their efforts seemed to have succeeded. The ship slowly moved away to port, that is, to the northward. We lost sight of her in the direction of Talienwan at about 1.45. Neither our batteries nor the guard-ship fired.

There were great speculations on the *Diana's* bridge. What might this drama be which we had just witnessed? Quite lately the Chinese had repeatedly reported to us that the Japanese were preparing a new desperate attempt to block up our squadron in Port Arthur. The fire-ships and blockships were not to come singly this time, but in groups of four abreast, secured together with chains.

Had the Japanese, in such an attempt, come upon the mines which our destroyers had laid out during the preceding nights? But then what started the fire? Was it caused by an accident or through carelessness? It was, anyhow, clear that the Japanese had been unlucky that night.

During the night the batteries on our land front only fired occasionally. On 8th August the bombardment of the town and harbour by the land batteries was continued at 7.45 a.m. Our gun-boats and destroyers were all sent out into the roads. Here our mine-sweeping flotilla was working with might and main.

At 9 a.m. a lucky shot of the enemy's set fire to a shed in which was stored a quantity of lubricating oil in drums (the shed was close to the south-west corner of the East Basin). It was just as well that the main oil depôt close by had not been hit. A bright flame at once shot up, and a gigantic cloud of thick black smoke rolled up into the air—for the Japanese an admirable mark. The enemy now directed his whole fire on the spot. However, on that day they were not successful. The Japanese knew the direction very accurately, but they were somewhat out in distance. Consequently they poured an incessant stream of fire for several hours on the bare northern slope of Golden Hill, on which there was not a soul.

The parties sent from the ships and port establishments to put out the fire suffered no losses.

The main depôt was successfully cleared. The burning oil, flowing out of the drums, which had burst, was diverted by a trench into a natural hollow in rear. Here it partly burned itself out, partly was put out, that is, smothered with earth.

Towards noon the fire was out, and at one o'clock the bombardment suddenly ceased.

The Admiral expressed his "special satisfaction" by signal to the *Peresviet*. We heard that she had been successful in hitting the "infernal little battery" and silencing it.

During the afternoon, and especially in the evening, a fierce battle was raging at our right centre. The light northerly wind occasionally brought us the rattling sound of machine gun and infantry fire, which penetrated the thunder of the larger guns. There was a pause between 10 and 10.30 p.m., then the fight broke out afresh, and continued with great violence until midnight. Occasionally short messages from the front told us that the fight was for Takushan Hill. It passed several times from one hand into the other. Finally, the hill remained neutral for a while. We had evacuated it, but the Japanese were unable to maintain themselves on it. The mortar battery on Golden Hill threw its 11-inch shell on those heights throughout the night at regular half-hour intervals. In these circumstances it was quite out of the question for men to stay there, leave alone to entrench themselves.

At 8 a.m. on 9th August we noticed that the Japanese had got their "infernal little battery" into working order again, but had moved it. They started bombarding us once more. Their fire was mainly directed against the battleships in the West Basin. There were a few hits, but they did no damage.

Again the *Retvisan* was specially unlucky. She had a lighter lying alongside, containing two 6-inch guns brought back from the land front. A projectile hit this lighter and it sank with the guns. The battleship was hit below the water-line. The damage was not serious, but the hole admitted about 400 tons of water. This was a quite superfluous cargo, which was specially disagreeable in view of the prospect of having to fight a decisive battle. Besides this, the turrets and casemates of the *Retvisan* were hit. The ship had three killed and several wounded, the captain amongst the latter (a slight wound only). The bombardment and our reply to it lasted all day. Later in the evening there was a short but fierce fight on our right wing. The ships of the squadron hastily filled up with coal and stores. The Japanese had not been in sight to seaward these last two days, and during that time they had not laid out any mines in the roads.

The night of 9th-10th August was calm and hot (80° F.), but not close, thanks to a light breeze from the north. We had completed all our preparations for going to sea, and everyone was now sleeping soundly, so as to gather strength for the coming day.

I will not indulge in speculations as to the feelings with which the squadron greeted the sun on 10th August. During these last two days there had hardly been any communication between the ships. I will merely endeavour to describe the general feeling on board the *Diana*. There was nowhere anything like the enthusiasm which had marked the short time under Makaroff. Neither were we filled with that craving for revenge, as was the case during the first moment after the foundering of the *Petropavlovsk*, nor were we in the state of elation as after the unexpected success of 15th May[1]; yes, not even in that state of cheerful determination with which we had greeted the signal to weigh on 23rd June. All that was a thing of the past. These events had left deep marks on every heart, but the feelings they aroused could not be reproduced. Our people, who had long since received their baptism of fire, and who had now so often looked death in the face, prepared for this battle as for a serious task, full of responsibility. "The thing is settled. To-morrow morning we go out into the deadly fight. Thank God!—Apparently no one is thinking of himself. One's duty has to be carried out." These few lines I scribbled in my diary, as I was going to bed on the eve of sailing.

There was yet something in the minds of all which I should not like to pass over in silence. There was a certain sense of satisfaction. We felt that the dissensions between the leaders as to their intentions, and the masses, with all their hopes and aspirations, were over at last.

[[1] The blowing up by mines of two Japanese battleships.]

During these last three days of land bombardment one had often heard the remark, with a ring of malice in it: "Perhaps 'they' will now realise that the Basins of Port Arthur are the graves of our squadron." The pessimists had then replied: "The grave? That would not be so bad. But this kind of death would not last long, and then would come the resurrection under the Japanese flag, and that is much worse."

The news that our sailing was imminent did not produce any enthusiasm, but only a general sense of relief. It was clear to all that we were bound to go out. The masses saw that so clearly that the reluctance of our leaders had already inspired the most terrible suspicions in the more excitable heads. Sometimes it seemed as if we were again in the frame of mind which obtained in the early days after the surprise attack on 8th February. Just as then, so now, we nearly heard the cry of "Treason! Our leaders have betrayed us!" Could there be anything worse than that?

(*To be continued.*)

THE TERRITORIALS AND THE DEVONSHIRE HORSE CENSUS.

By Colonel J. C. Dwyer, A.V.D. (retired).

THE success which has attended the taking of a census of horses in Devonshire is remarkable in more ways than one. It indicates that public interest in matters of horse supply has not died out with the close of the South African War. It displays the ease with which somewhat delicate investigations may be successfully carried out, when entrusted to county residents and local officials. Furthermore, it demonstrates the comparatively small cost attending such operations when skilfully planned and loyally supported.

In the very interesting paper read by Lord Fortescue before the National Defence Association we have summarised the results of this experiment, and are furnished, for the first time, with tangible figures wherewith to gauge the horse strength of the County of Devon. In perusing a paper of this kind, the questions naturally arise, in what way can the information furnished be utilised? Will it assist those engaged in framing and perfecting schemes of mobilisation? and if so, in what way? It is perhaps too early at present to estimate its value. Other counties, we are informed, are to follow suit, and until the whole returns are complete and to hand, an opinion as to the actual value of such statistics must necessarily remain in abeyance.

In the meantime we must rest satisfied with the figures before us, for there is evidence of much painstaking in their collection, and as far as they go, they seem to be very complete, and to embrace the whole horse strength of the county. No less than 34,400 horses are returned as "serviceable" out of a total of 43,900. It is a large proportion, and should furnish an ample supply to meet the needs of the mounted territorial units of Devonshire, and leave a liberal surplus.

In order, however, to arrive at a more accurate estimate as to the potential value of such statistics, it is necessary to assume that war conditions prevail, and undertake a task of dissection and see how the figures work out under these conditions. It is proposed in this paper to deal with two points only, *viz.*, "age" and "soundness."

Age.

With reference to age, 12 per cent. of those classed amongst the "serviceable" are 4-year-olds, and it being generally agreed that horses of this age are unfit to stand the rough work of active service, they may, without further consideration, be eliminated from the calculation, and the balance brought down to 30,272—roughly 30,000.

To estimate the number of "aged" horses, classed also under the heading of "serviceable" is not so easy a task. Rather more than 50 per cent. are returned as "eight and aged," and as numbers of horses will do excellent work up to 16 years, and even over that age, the omission need not greatly affect the estimate, more especially as it is stated that horses "unsuitable for hard work on account of *old age,* lameness, or weakness" have been recorded as "unserviceable." In this regard Lord Fortescue remarks:—"The proportion of 'unserviceable' horses would have been very much larger if the standard of classification had been as high as that of purchasers of remounts in ordinary times." No doubt this would be so. Horses purchased as remounts are expected to work 10 or 12 years. They must, as far as class, colour, age, height, weight, quality and soundness, be up to army standard, and consequently a large number of the horses included in the Devonshire return as "serviceable" would undoubtedly fail to qualify as such, for the percentage of rejections in the army is high when compared with the number of horses inspected. What this percentage would be, however, need not now be speculated upon, for the census problem is interesting only in so far as it implies a preparation for a state of war.

Soundness.

To dispose of the question of "soundness" and so proceed another step with the analysis of the figures, it is first necessary to determine approximately what will be the loss on this balance of 30,000 horses, when required for military purposes and submitted to the necessary ordeal of an examination for soundness. No official scale has ever been issued by which the proximate loss likely to occur in the process of weeding out the unsound from a batch of horses can be estimated. The percentage must necessarily vary more or less under different conditions, but even assuming such a table or scale has been compiled, it is not at this moment at our disposal, and therefore it becomes necessary to improvise one by reference to some shorthand notes taken at inspections during the busiest time of the South African War, for the requisite data upon which to work. They should at least furnish a fair average war standard wherewith to effect a measurement. If they err at all, it is on the side of generosity, for, during the period to which they refer, the military authorities were very pressed to find horses, and fresh "instructions," greatly lowering the established standard, were issued for guidance in order to facilitate and expedite purchases going on all over the United Kingdom.

The "instructions" (which are quoted from memory) were to this effect:—"All horses between the age of 5 and 12 years, from 15 to 16½ hands in height, being practically sound, and likely to do hard work for *two years,* were to be bought."

Taking, haphazard, the reports on 1,000 of these horses, the property of eight different firms, all of which horses, when viewed *en masse,* appeared fit for the service, no less than 208 were rejected for unsoundness, and this, too, as already remarked, at a time when the standard of soundness was touching its lowest point. Roughly, this rate amounts to 20 per cent., and if applied to the Devonshire figures, would cut down the balance of horses recorded as "serviceable" to 24,000. Lord Fortescue is disposed to think the percentage (21 per cent.) of "unserviceable" horses rather a high one. Perhaps this may be so; until, however, the other returns come to hand it will be impossible to make a comparison. In any case, whether it be high or low, as compared with other counties, it certainly represents a serious leakage and great loss in horse strength to Devonshire.

Possibly not the least useful purpose which census-taking and similar investigations in regard to horses will serve is to set numbers of people thinking over the problems raised, and so perhaps lead to the discovery of some simple and inexpensive method by which a loss such as this one, for instance, resulting from the presence of a large number of unserviceable horses, may at least be greatly diminished. Regarded from a patriotic point of view, it should be generally recognised that next to personal service in the territorial ranks should come the keeping of a horse or horses, fit and suitable to serve in the army in a national emergency.

Within the twelve miles' radius can be found two large horse-owning firms, the one directed by a keen business man, greatly interested in his horses, which he not only buys, but personally supervises. In the other, the horses are left to subordinates to manage, whose interest is entirely centred in getting through their daily routine work with dispatch. Both these firms are said to pay on an average about the same sum of money for their stock. In the one case, however, no less than 80 per cent. of the horses are fit and in condition for immediate military service, whilst in the other not more than 10 per cent. would be able to qualify. In other words the one firm is contributing largely, though indirectly, to our national strength, whilst the other, owing to mismanagement, altogether misses its opportunity. Such instances, unfortunately, are far from exceptional, and when brought to notice, serve to dispose of a very common fallacy, frequently imported into discussions on horse supply, *viz.*, that the whole of this question resolves itself exclusively into one of spending money.

Until it becomes more generally recognised that horse flesh is a delicate and very perishable commodity to trade in wholesale; that rapid depreciation in the value of the best stock, and heavy losses are easily incurred, and always follow the absence of good management, personal care, and proper organisation, no great improvement can be looked for in such matters. Prodigal expenditure in the face of a grave emergency can never be made to take the place of timely preparation, even though millions should be expended in the effort. South African experience proves this up to the hilt.

Lord Fortescue's paper does not tell us what the strength of the Devonshire mounted units is to be on mobilisation, and what excess of horses it is calculated would remain over and above the number. Nor does it inform us how the census horses would "pan out" as regards class when allotted to the local units. An ideal condition would no doubt be that each county should make provision for its own horse needs within its own boundaries.

Another point suggested by Lord Fortescue's paper is that no one quite knows what, ultimately, will be the attitude of the senior and dominant partner in the service toward the junior one, when they take the field together. In peace time the regulars may be found conciliatory and perhaps obliging, but on mobilisation a change of temper becomes unavoidable, when all the latent activity of fierce competition to secure horses at any cost, is set free. It must never be forgotten that the instincts and traditions of the army proper are predatory, and no one can be quite sure that the mounted territorial units will prove themselves able to hold on to their own in the face of a horse famine in war time; or how far, under such circumstances the county associations will be able to resist inroads upon their territorial horse preserves. It requires no great experience of army methods to understand that when the time comes a real danger will threaten the efficiency of territorial mounted units in this direction. We have only to call to mind a few of the object lessons furnished during the late South African War to establish this. The regulars do not, at such times, spare even their own branches of the service. What then, it may well be asked, would be the fate, say, of a territorial unit, up to full strength in horses, standing fast and awaiting orders, whilst a service regiment, under orders to move, is (to use a nautical phrase) "alongside," with an enterprising and clamouring commander, bent upon making good his casualties in horseflesh, at any cost, and at anybody's expense?

Certainly with an outlook such as this it is well to utilise the present lull in our affairs to the best advantage, and that the territorial body should look well to its armour in these piping times of peace. By such means when war is in the air, and the strain comes, it may be prepared, and perhaps able, to resist pressure from the outside and so preserve its own mounted units intact and efficient. For the time being it must be conceded that the census just completed with so much success, will at least inform the good people of Devonshire the full extent of their present horse possessions, and nothing perhaps will tend more to keep alive the public interest in this class of property than the stocktaking which Lord Fortescue suggests should in the future be carried out annually.

NAVAL NOTES.

Home. The following are the principal appointments which have been made :—

Rear-Admirals—F. S. Inglefield to be Admiral Commanding Coastguard and Reserves; E. A. Simons to be Admiral Superintendent, Malta Dockyard; F. C. D. Sturdee, C.V.O., C.M.G., to be Rear-Admiral in the First Division of the Home Fleet; A. A. C. Galloway to be Rear-Admiral in the Third Division of the Home Fleet. Captains—Commodore A. G. H. W. Moore, C.V.O., to be Director of Naval Ordnance and Torpedoes; S. A. G. Calthorpe, M.V.O., to be Captain of the Fleet to Admiral Sir W. H. May, G.C.V.O., K.C.B., Commander-in-Chief of the Home Fleet, with temporary rank as Commodore 1st Class; H. H. Torlesse to be Captain-Superintendent of Sheerness Dockyard; C. L. Napier to "Inflexible"; C. W. Keighley-Peach to "Hogue"; J. C. Ley to "Cornwall"; W. O. Boothby, M.V.O., to be Naval Assistant to Second Sea Lord; L. Clinton-Baker to "Minotaur," as flag-captain.

Admiral-of-the-Fleet Sir A. K. Wilson, V.C., G.C.B., G.C.V.O,, has been appointed First Sea Lord in succession to Admiral-of-the-Fleet Lord Fisher, G.C.B., O.M., G.C.V.O.; it is understood that Sir A. K. Wilson will officially enter upon his new duties on the 21st of January.

The Admiralty have officially announced that, to avoid confusion, the terms "Nore, Portsmouth and Devonport Divisions," as applied to the ships of the Third and Fourth Divisions of the Home Fleet attached to the respective ports, will be discontinued and the following terms employed :—"Nore Sub-Division, Home Fleet; Portsmouth Sub-Division, Home Fleet; and Devonport Sub-Division, Home Fleet." The Rear-Admirals, Captains "D," and inspecting captains of submarines will be referred to in future as "sub-divisional officers."

France. The following are the principal appointments which have been made :—Capitaine de Vaisseau—J. A. Chéron to "Montcalm." Capitaines de Frégate—R. P. Chevalier, A. F. G. Langier to be Capitaines de Vaisseau; M. B. G. Merveilleux du Vignaux to "Ibis"; A. C. E. Borsat de La Pérouse to "Manche"; A. F. Serès to command of Torpedo-Flotilla in China.—*Journal Officiel de la République Française.*

Reorganisation of the Superior Council of the Navy.—A Decree reorganising the Superior Council of the Navy was published on the 1st October last. This Council, under the Presidency of the Minister of Marine, will, for the future, be composed of the four Vice-Admirals Inspector-Generals, the Vice-Admiral Chief of the General Staff of the Navy, and the Vice-Admirals, who, during the previous two years, have been in command of a squadron.

The Minister can summon to a seat on the Council, with a deliberative voice, when matters relating to their Departments are under consideration, the Inspector-Generals of Naval Engineering, Commissariat, Medical, and

France.

Naval Works. The Directors and heads of the central administrative service can also be summoned by the Minister to the Council, with a deliberative voice, when questions relating to their department come up for discussion.

The New Torpedo-School Division.—In order to assure unity of instruction among the different specialised branches pertaining to the torpedo and electrical services, a new torpedo-school division is being formed, which will be under the command of a Rear-Admiral. The division will include :—1. The school for torpedo officers, which is installed on shore; 2. The school for seamen torpedo men on board the *Marceau*; 3. The school for torpedo mechanics on board the *Cécille*; 4. The central school of instruction for the heads of the wireless telegraphy stations at Toulon; 5. The school-ships on board which the torpedo apprentices are being trained. The Central School of Instruction for Wireless Telegraphy at Brest was suppressed on the 1st November. Rear-Admiral Guillou, who has been appointed to the command of the new Torpedo Division, has hoisted his flag on board the battleship *Brennus*, while Rear-Admiral Le Bris, who has been appointed to the command of the Gunnery School Division, has his flag flying in the battleship *Masséna*; both these ships are to be kept fully manned and ready for service.

Launch of the "Mirabeau."—The new first-class battleship *Mirabeau* was successfully launched at Lorient on the 28th of October last. She will be the fifth of the six battleships of the 1906 programme to take the water; of the four already launched the *Voltaire* was built at La Seyne, the *Diderot* and *Condorcet* at Saint-Nazaire, the *Danton* at Brest, and the sixth, the *Vergniaud*, is being built at Bordeaux. The five that will have been launched in 1909 represent a total of 91,590 tons, the most important and largest amount ever launched in France in one year; it is nevertheless inferior to the tonnage launched in Germany in 1908-9, during which period 104,971 tons of new ships were constructed.

Recommendations of the Conseil Supérieur de la Marine.—The French fleet, according to the Superior Naval Council, should consist of 45 battleships, 12 scouts, 140 torpedo-vessels, 64 submarines, and 3 mine-layers.

No more armoured cruisers should be built; these vessels no longer differing from battleships, except in having fewer heavy guns and more speed, the Council has decided that they are unnecessary. Such armoured cruisers as already exist should be utilised in divisions on foreign service.

The scouts should be lightly armed vessels, but of sufficient size to keep the sea in any weather, and of great speed—5,000 to 6,000 tons at least.

There should be two classes of torpedo-vessels; one class, for use with the fleet, should be of at least 600 tons displacement; the other, constituting the coast flotillas, should not exceed 300 tons displacement. The Council proposes 60 of the first class and 80 of the second.

The submarines should all be of great radius of action and designed for offensive purposes, the inshore defence of harbours being assured by the older offensive boats and no longer by boats specially constructed for defensive purposes.

The Council, furthermore, has called attention to the necessity of constructing a special practice ship for midshipmen, and of providing appropriate material for raising and dragging for submarine mines; the recent purchases of steam trawlers by the British Admiralty may serve as a guide in this respect.

As regards the fighting ships of all classes, the Council expressed the wish that the proposed programme be completed in 1925 at the latest. It has fixed as age limits for battleships 20 years and for scouts and torpedo-vessels 15 years (there is insufficient experience as yet to fix an age limit for submarines).

According to these figures, it will be necessary to lay down, from 1910 to 1922, inclusive, 39 battleships, or 3 a year; 12 scouts, or 1 a year; 55 squadron torpedo-vessels, or 4 a year; 75 flotilla torpedo-vessels, or 6 a year; and about 40 submarines, or 3 a year. Taking all these vessels at the average displacements now adopted, we arrive at an annual expenditure of 230,000,000 francs (£9,200,000) for new constructions, instead of the 120,000,000 (£4,800,000) allowed in recent years.

Regarding naval stations, the Council expressed the opinion that that of Rochefort should be entirely given up; that Lorient should become merely a building yard for large ships; that Cherbourg, Toulon and Brest should remain as they now are, yards for building and repair, the former building only submarines and torpedo-vessels; the last only large ships. It recommended that Bizerta be fitted as a principal base of operations, on the same footing as Brest, Cherbourg and Toulon, and that each of these ports have at least four docks capable of taking the largest ships of the fleet. It insisted that at least three-fourths of all vessels be constantly in commission with full complements, and that the number of men under enlistment be always amply sufficient for all necessary services in addition to the manning of these vessels.

Finally, the Council, withdrawing from the position which it took in 1907, declares itself in favour of unity of calibre and gives the preference to a main armament composed solely of 12-inch guns.

The characteristics decided upon by the Council for the battleships, which are to be asked for from the Legislature, with authority to begin them in 1910, are now known.

The main armament consists of twelve 12-inch guns, distributed in 5 turrets: two 3-gun turrets on the middle line, one forward and the other aft, and three 2-gun turrets, of which one is on the middle line, just forward of the after turret, and the two others on the broadsides. The after double turret does not fire over the triple turret. In short, except for the introduction of the 3-gun turrets, the general arrangement is that of the *Dreadnought*. Ten guns can be fired on either broadside, and 7 ahead or astern.

For three or four years past 3-gun turrets have been talked of for projected battleships; there has been talk of adopting them in Germany, and in England, but hitherto the plan has not been put into effect. Its evident advantage is allowing the placement of the same number of guns upon a less length of ship and with less weight. The no less evident disadvantage is that in the case of any damage done the turret or its mechanisms, 3 guns are put out of action instead of 2; but that is a reason which no longer is considered important; the fear of putting too many eggs in one basket has gone out of fashion, and people are no longer frightened by big guns, nor by big turrets, nor by big displacements.

Still there are many difficulties in the working out of a 3-gun turret which, although not insurmountable, are none the less serious. The right and left guns when fired will disturb the train much more than is done by the guns of double turrets, since they are further out from the axis; but it is expected that this effect will be lessened by the greater inertia of the heavier turret. The loading and other mechanisms of each gun must be completely independent, from the magazine to the line of sight, so as to allow each piece to fire the 2 shots a minute that can be obtained from it on the proving ground, that is, for the turret, one shot in at least every 10 seconds; and it is not very easy to assure correct pointing in so short an interval; nevertheless, thanks to the use of apparatus for continuous pointing—inspired by those which are in use in England—it is expected to succeed in attaining these conditions. Besides this main battery, the Council has recommended a secondary battery of eighteen 5½-inch guns, distributed in 3 groups, in armoured casemates. Perhaps some 65-mm. guns will also be added for use against torpedo-boats, although the 5½-inch guns are intended for that purpose.

There will also be 4 underwater torpedo-tubes of 45-cm. (17¾-inch), 2 forward and 2 aft. The protection will be the same as in the *Danton* class, except that the funnels and ventilators will be covered with 18-cm. ($7\frac{1}{12}$-inch) plating, as will also the casemates of the 5½-inch guns. Large capacity explosive shells with no perforating power are not to be allowed to destroy the superstructures and cause a loss of speed.

The famous anti-torpedo armour, which casts 1,000 tons of displacement in the *Danton* class, and which was adopted for them without preliminary test, is abandoned, although the question of its efficiency is no more settled than it was before. The test made at Lorient, on a caisson representing the hull of the *Mirabeau*, does not seem to have given very conclusive results, and, moreover, the system in principle was abandoned without waiting for that test. It is a decision which might advantageously have been taken 3 years earlier.

On the other hand, copying foreigners, we are to go back to the anti-torpedo nets. It is to be hoped that an arrangement of them will be found which will avoid the criticisms formerly made against them and which led to their abandonment 15 years ago.

The propelling machinery will consist of 4 turbine machines like those of the *Danton*, with 4 screws. The maximum speed will be 20 knots.

All these characteristics lead to a displacement of 22,000 tons, like that of the German *Oldenburg* class, which have nearly the same armament (twelve 30-cm. (12-inch) and fourteen 5·9-inch), superior to that of the English *Neptune*, which is only of 20,250 tons, carries ten 12-inch guns, and steams 22 knots.

In comparison with the *Danton* class, and above all, with the hybrid plan which the Council proposed in 1907, there is evidently a sensible gain in offensive power. But there is also a 4,000-ton increase of displacement and an increase of price which may be taken at 12,000,000 francs (£480,000) per ship. And this increased expense will probably not be without influence on the reception which will be given to the Council's projects by the Minister of Finance first and by Parliament afterwards.—*Le Yacht* (*Army and Navy Journal*).

Germany. The following are the principal promotions and appointments which have been made: Admiral — H.R.H. Prince Henry of Prussia to be Grand Admiral and Inspector-General of the Fleet; Von Fischel to be Chief of the General Staff of the Navy; Graf von Baudissin to be Commander-in-Chief at Wilhelmshaven. Vice-Admirals—Von Holtzendorff to be Commander-in-Chief of the High-Sea Fleet; Pohl to be Commander-in-Chief of the 1st Squadron of the High-Sea Fleet; Coerper to be Inspector of the Constructor's Department of the Navy. Rear-Admirals—Pohl, von Heeringen, Capelle to be Vice-Admirals; Jacobsen to be Inspector of Naval Artillery. Kapitäns zur See—Gerdes, Lans to be Rear-Admirals; Koch to be Second-in-Command of Scouting Division, with rank as Commodore; Schütz to "Nassau"; Von Rebeur-Paschwitz to "Elsass"; Wurmbach to "Prinz Heinrich."—*Marineverordnungsblatt.*

Grand Admiral H.R.H. Prince Henry of Prussia handed over the command of the High-Sea Fleet to Vice-Admiral von Holtzendorff on the 1st of October, his flag being struck the same evening. His Royal Highness, on giving up the command, issued the following noteworthy Order of the Day to the Fleet :—

"Fearlessness, calm and purposeful work with the hour of trial alone in view, reticence, strict discipline, coupled with a kindly feeling on the part of superiors towards subordinates, true comradeship—these qualities must continue in the future in ever-increasing measure to distinguish the officers and men of the High-Sea Fleet.

"With this wish I to-day lay down, at the order of His Majesty the Kaiser and King, my command, a command which I was proud to hold and which I relinquish with extreme regret, but which I shall always look back upon with feelings of especial gratitude towards those of all ranks who have been serving under me."

Vice-Admiral von Holtzendorff, who succeeds Prince Henry in the command of the High-Sea Fleet, has seen some forty years' service in the Navy. His first appointment as a captain dates from 1896, when he was appointed to the command of the cruiser *Prinzess Wilhelm*, and in which he took part in the occupation of the Kiao-Chau territory. In 1900, in command of the battleship *Kurfürst Friedrich Wilhelm*, he sailed with the division composed of the four ships of the *Brandenburg* class again for China, the squadron being despatched as the consequence of the Chinese disorders of that year. In 1903-04 he was again in China, this time as Rear-Admiral Second-in-Command of the cruiser squadron in Far Eastern waters. In 1907 he was appointed to the command of the First Squadron in the High-Sea Fleet, which he now vacates, to take over the supreme command of the Fleet; he is succeeded in the command of the First Squadron by Vice-Admiral Pohl.

The Hudson-Fulton Commemoration Fêtes at New York.—Considerable surprise has been expressed that the German Navy was represented at the recent Hudson-Fulton Fêtes by only four small cruisers, viz., the *Bremen* —which was already on the American station—a sister-ship, the *Dresden*, which, at the time, was on her trials, and the two training-cruisers *Hertha* and *Victoria-Luise*. It had originally been the Kaiser's intention that his fleet should be represented by four of the armoured cruisers attached to the High-Sea Fleet, but the entry and training systems interfered to prevent this intention being carried out. The instruction of the recruits—both of the deck and engine-room *personnel*—is carried out on board sea-going ships between the end of September and the end of March, so that during this period the ships have a portion of their crews only partially trained. This system of recruiting—the recruits for the year invariably joining on the 1st October—consequently necessitates the retention in home waters of the ships of the High-Sea Fleet at this period of the year to allow of the disembarkation of the men who have completed their three years of service and the embarkation of the newly-joined recruits.

Steam Trials.—The new first-class battleship *Nassau* and the new first-class armoured cruiser *Blücher* were commissioned on the 1st of October at Wilhelmshaven for their trials, which have since been proceeding successfully. Full details as to the results of the trials are not yet forthcoming, but it is reported that at the full-speed trials the *Nassau* maintained a mean speed of 20·5 knots, being a knot and a half over the contract, and that the *Blücher* attained a speed of 25·33 knots, or more than 3 knots over the contract speed.

Three new second-class cruisers have been undergoing their trials with marked success. The *Emden*, on her full-power run, made an average of 25 knots, this was the contract speed; she has reciprocating engines, but is the last of her class which will be so fitted, as turbine engines are to be fitted in all her successors. Her sister-ship, the *Dresden*, which has Parsons turbines, averaged 27·5 knots on her full-speed trials, 28 knots being reached during one run in deep water; this is 3 knots over the contract speed. Another ship of the class, the *Mainz*, which is still on her trials, has also recently averaged 27 knots on her full-speed run. All these vessels have a displacement of 3,600 tons, the contract speed being for 25 knots.

Cost of the Fleet.—The cost of the Fleet in commission is distributed as follows:—

1. *The High-Sea Fleet.*

	1909.				1908.	
	Marks.		£	s.	£	s.
Active Formation ... ... 16 Battleships.	11,779,130	=	(588,956	10)	550,135	2
Reserve Formation ... . 1 Battleship. 2 Coast-Defence Armoured Ships.	1,146,540		(57,327	0)	61,029	0
Scouting Ships ... ... 4 Large Cruisers. 6 Small Cruisers. Tender.	6,062,810		(303,140	10)	281,878	14
Torpedo-Vessels	4,764,195		(238,209	15)	189,138	16
Total	23,752,675		(1,187,633	15)	1,082,181	12

Showing an increase of 2,109,043 marks (£105,452 3s.) as compared with last year.

Germany.

2. *Ships on Foreign Service.*

	1909.			1908.	
	Marks.	£	s.	£	s.
The East Asian Station ... ... 1 Large Cruiser. 3 Small Cruisers. 4 Gunboats. 3 River Gunboats. 1 Special Service Steamer	3,862,878	(193,143	18)	202,516	8
The Australian Station ... ... 1 Small Cruiser.	337,320	(16,866	0)	12,060	0
The West African Station ... ... 1 Small Cruiser. 1 Gunboat.	409,740	(20,487	0)	22,285	16
The East African Station ... ... 2 Small Cruisers.	534,120	(26,706	0)	24,492	0
The American Station .. .. 1 Small Cruiser.	504,840	(25,242	0)	23,902	16
Constantinople ... ... 1 Stationaire.	92,500	(4,625	0)	4,681	4
Surveying Duties ... ... 1 Surveying Ship.	161,880	(8,094	0)	7,880	8
Total	5,903,278	(295,163	18)	297,818	12

Showing a decrease of 53,094 marks (£2,654 14s.) as compared with last year.

3. *Training Ships.*

	Marks.	£	s.	£	s.
Cadets' and Boys' Training Ships ...	3,091,800	(154,590	0)	131,080	18
Gunnery School Ships	1,807,717	(90,385	17)	80,700	5
Torpedo School Ships	1,459,650	(72,982	10)	60,712	2
Submarine Mining	661,060	(33,053	0)	30,816	0
Coast Pilotage	61,740	(3,087	0)	2,991	2
Total	7,081,967	(354,098	7)	306,300	7

Showing an increase of 955,960 marks (£47,798) as compared with last year.

4. *Special Service Ships.*

	Marks.	£	s.	£	s.
Imperial Yacht "Hohenzollern" ...	529,620	(26,481	0)	20,184	0
Surveying Ships (Home Waters) ...	70,080	(3,504	0)	2,212	16
Artillery Experiments	653,136	(32,656	16)	33,135	0
Torpedo Experimental Ship	937,200	(46,860	0)	37,651	4
General Experiments	229,170	(11,458	10)	10,936	4
Fishery Protection	147,750	(7,387	10)	8,429	3
Total	2,566,956	(128,347	16)	112,548	7

Showing an increase of 315,989 marks (£15,799 9s.).

	Marks.	£	s.	£	s.
5. *For Special Purposes*	992,115	(49,605	15)	37,172	0

Showing an increase of 248,675 marks (£12,433 15s.).

COMBINED TOTAL.

	Marks.	£	s.	£	s.
High Sea Fleet	23,752,675	(1,187,633	15)	1,082,181	12
Foreign Service	5,903,278	(295,163	18)	297,818	12
Training Ships	7,081,967	(354,098	7)	306,300	7
Special Service Ships	2,566,956	(128,347	16)	112,548	7
Special Purposes	992,115	(49,605	15)	37,172	0
Total	40,296,991	(2,014,849	11)	1,836,020	18

Showing an increase of 3,576,573 marks (£178,828 13s.) as compared with last year.

—*Etat für die Verwaltung der Kaiserlichen Marine,* 1909

Italy. *The Naval Manœuvres.*—It was originally intended that the naval manœuvres should be held in the Adriatic and Ionian waters, Taranto being used as the principal base of operations; in consequence, however, of a serious outbreak of scarlet fever at that port, at the last moment the whole arrangements were completely altered, the strategic manœuvres were given up, and the fleet was concentrated at Gaeta, the manœuvres practically resolving themselves into tactical operations on a large scale, with Gaeta as the base of the fleet. The fleet was under the command of Vice-Admiral Grenet, the Commander-in-Chief of the Mediterranean naval forces, instead of being, as has been the custom of recent years for the manœuvres, under the command of Admiral H.R.H. the Duke of Genoa, and was constituted as follows :—

1st Division.
First-class battleships.—*Regina Margherita* (Flagship of Rear-Admiral Grenet), *Benedetto Brin, Roma.*
Torpedo-cruiser.—*Agordat,* as repeating ship.

2nd Division (Divisione Volante).
First-class battleships.—*Regina Elena* (Flagship of Rear-Admiral Amero d'Aste), *Vittorio Emanuele, Napoli.*
Torpedo-cruiser.—*Coatit* as repeating ship.

3rd Division.
First-class cruisers.—*Garibaldi* (Flagship of Rear-Admiral Viale), *Varese, Francesco Ferruccio, Amalfi.*
Torpedo flotilla.—

First Torpedo Division.
Destroyers.—*Borea, Zeffiro, Aquilone, Espero.*

Second Torpedo Division.
Destroyers.—*Dardo, Lampo, Freccia, Strale.*

Third Torpedo Division.
Destroyers.—*Artigliere, Bersagliere, Lanciere, Granatiere.*

The manœuvres lasted from the 11th to the 21st of September, and the following programme was carried out:—

11th-13th	September :	Strategical exercises and night attacks by torpedo boats;
13th	,,	Distribution of prizes by H. M. the King for the Annual Prize Firing;
14th	,,	Prize firing by the torpedo boats;
15th	,,	Landing exercises;
16th-21st	,,	Tactical manœuvres;
22nd	,,	Lecture at the Naval War College.

The night attacks by torpedo boats on the fleet were carried out by 12 first-class torpedo boats and 12 coast torpedo boats; on the first night the 12 destroyers attached to the fleet remained in close proximity to the main body to repel the attacking boats, but on the second night they were detached from the fleet to hunt down the hostile boats independently.

For the tactical manœuvres the fleet was divided into two opposing forces, commanded in turn by the flag-officers and respective captains of ships. In addition to the practical manœuvres at sea, war games for the officers of the fleet were held at the War School on shore under the superintendence of the Chief of the Admiralty Staff.

The King, accompanied by Admiral H.R.H. the Duke of Genoa, was present at the manœuvres, between the 11th and 17th September, on board the armoured cruiser *Pisa*. On the 15th September he went on board the battleship *Vittorio Emanuele III.*, which bears his name, and presented a battle flag.

A Press bureau was this year established on board the transport *Volta*, on board which ship also Vice-Admiral Bettolo, the Chief of the Admiralty General Staff, with his staff, had also embarked.

The Annual Prize Firing.—This year's prize-firing took place as usual in Aranci Bay between the 23rd July and 12th August. The umpires were Rear-Admiral Avallone, as Chief, with two Captains, two Commanders, and six Captain-Lieutenants as his assistants. The practice consisted of individual firing by the gun-layers, director-firing by individual ships and collective firing by divisions of three ships. At the gun-layers' practice, from 2 to 4 rounds, with practice ammunition, were fired per gun from the heavy and medium calibre guns at a range of from 2,400 to 4,000 yards against an anchored 21 feet by 55 feet target, and from the light guns 6 rounds per gun with practice ammunition at a range of from 1,250 to 1,600 yards, against an anchored 9 feet by 30 target. The speed for passing the target for the large ships was fixed at 14 knots, for the torpedo craft 20 knots. The only shots counted were those that struck the target. The director-firing was carried out in two series, in the first with all guns down to the 4·7-inch inclusive, against a 21-ft. by 75 canvas target, erected on the hull of a torpedo boat, which was towed at a speed of 20 knots at a range of 7,000 yards; in the second, the firing was from the medium-calibre guns, the target being towed at a speed of 14 knots. The divisional firing was carried out under similar conditions, the ships being either in single line ahead or quarter column, two cables apart from each other.

The Points of Merit were as follows:—

Names of Ships taking part in the Competition.	Gunlayers Test.		Director Firing.	
	Heavy and Medium Calibre Guns.	Light Guns.	Single Ships.	Divisional.
Battleships and Cruisers.				
Regina Margherita (Flagship of Commander in Chief)	63	43	6	33
Benedetto Brin	57	59	33	
Regina Elena (Flagship of Second-in-Command)	54	27	0	19
Vittorio Emanuele	50	29	35*	
Napoli	83	63	15	
Garibaldi (Flagship of Cruiser Division)	90	89	25	24
Varese	61	71	0	
Francesco Ferruccio	91	45	28	
Torpedo Vessels.				
Agordat	—	37		
Coatit	—	32		
Espero	—	47		
Borea	—	41		
Aquilone	—	26		
Lanciere	—	55		
Granatiere	—	25		

*The Vittorio Emanuele fired two rounds (both hits) from her two 8 inch turret guns in 16 seconds.

Italy.

The director-firing compares badly this year with last, a fact due in a great measure to the more difficult conditions imposed this year, and also to the fact that all the gunnery officers of the ships had been newly appointed.

The presentation of the prizes was made by the King on the 13th, on board the *Vittorio Emanuele III.*, the Annual Cup, given by Admiral H.R.H. the Duke of Genoa for the highest gun-layers' points, being carried off by the *Francesco Ferruccio*; the *Vittorio Emanuele* won the cup presented by the Duke of the Abruzzi for the single ship director firing; the 1st Division carried off the Cup presented by the Minister of Marine for the divisional director-firing, while the *Garibaldi* and *Lanciere* received the two champion prizes for light guns.

The King's Cup was won by the division consisting of the cruisers *Garibaldi*, *Francesco Ferruccio*, and *Varese*, which carried out a series of collective firing in the presence of the King at the end of the manœuvres against a 21-foot by 75-foot canvas target on a torpedo boat, which was towed at a speed of 20 knots at a range of 7,000 yards; out of 109 shots fired from all three ships, there were 78 hits, of which 21 struck the hull of the boat and 57 the canvas target, the percentage of hits being thus 71·5.

The Minister of Marine has this year given a large order to Messrs. Barr and Stroud for their range-finders.

Speed Trials.—The new first-class battleship *Napoli*, at her three hours' full-speed trial, made an average of 22·5 knots, with the engines developing 19,700-I.H.P., and making 122 revolutions; she has a displacement of 12,500 tons, and steam is provided by 22 Babcock and Wilcox water-tube boilers. The new first-class battleship *Roma* has also completed her trials successfully; at her three hours' full-speed trial she averaged 22 knots, with her engines developing 21,000-I.H.P., steam being supplied by 18 Babcock and Willcox water-tube boilers.

The new first-class armoured cruiser *Pisa* has also successfully completed her trials; at her three hours' forced-draught trial on the 3rd July, she averaged a speed of 23·5 knots, with the engines developing 20,812-I.H.P. and a coal consumption of 819 gr. (1 lb. 10 oz.) per indicated horse-power per hour, and during a six hours' run she maintained a speed of 23·85 knots, or nearly 2 knots over the contract. She is provided with 22 Belleville water-tube boilers.

A sister-ship of the *Pisa*, the *Amalfi*, has also completed her trials; at her three hours' full-speed run with the engines developing 20,812-I.H.P. and a coal consumption of 819 gr. (1 lb. 10 ozs.) per indicated horse-power per hour she maintained a speed of 23·64 knots. At her economical coal consumption trial with 8 boilers alight, the engines developing 2,447-I.H.P., and making 65 revolutions, she maintained a speed of 11 knots with a coal consumption of 806 gr. (1 lb. 9½ ozs.) per indicated horse-power per hour, and a total consumption of 1,972 kg. (2 tons 400 lbs.); she has thus a steaming radius of 11,000 miles at 10 knots speed, as her total coal stowage is 2,100 tons. Steam is supplied by 22 Belleville boilers.—*Marine Rundschau*, *Rivista Marittima*, and *Revue Maritime*.

Italy.

Torpedo Experiments against the "Francesco Morosini."—To test the actual result of torpedo fire against a battleship, the Italian Navy has been making experiments with the 11,000-ton battleship *Francesco Morosini*, which has been lately struck out of the active list. Advantage was also to be taken of the experiment to test some new theories as to the best method of construction of a vessel's underwater framing and arrangement of compartments in order to best resist torpedo attack. The attack was to be made by a standard torpedo with a normal charge, and the explosion was to be effected, as far as possible, under the usual conditions of an ordinary hit. A frame cradle was attached to the vessel to carry the torpedo, which was placed at right angles to the line of keel, and with its nose touching the vessel. The regulation type and quantity of explosive were adopted, and the reservoir chamber of the torpedo was filled with compressed air of the pressure that would theoretically remain after a run of normal length. The depth below the waterline was three metres. The effect of the explosion above water was not more than had been expected, but it was very evident that considerable damage had been done to the vessel's hull, as she quietly took a list and, swerving over on her side, went to the bottom, where she still remains, while every day she settles still more. An examination of the damage has been made as far as possible by divers, and it appears that there is a hole of over fifty square metres in area, which is considerably more than had been expected. It is considered that the result of this experiment will be the building by Italy of a new type of vessel, very swift and with a main armament consisting of torpedoes, torpedo tubes being fitted in a very much larger quantity than in any existing vessel.—*Army and Navy Journal.*

MILITARY NOTES.

Home. The following are the principal appointments which have been made:—

Lieut.-General Sir C. Tucker, G.C.V.O., K.C.B., to be Colonel of the Cheshire Regiment.

Colonel—W. Douglas, C.B., D.S.O., to command of 14th Infantry Brigade (5th Division, Ireland).

Indian Army.—Major-Generals—A. L. Playfair, Indian Army, to be Colonel of the 97th Deccan Infantry; Sir D. Haig, K.C.V.O., C.B., Chief of the Staff in India, to have temporary rank as Lieut.-General while so employed; B. T. Mahon, C.B., D.S.O., to command of 8th (Lucknow) Division.

Regimental Distinctions.—Army Orders (3rd November) state that the King has approved of the award of the undermentioned honorary distinctions to be borne on the colours, or appointments, of the following regiments;—

Royal Scots (Lothian Regiment)—Havannah.
Buffs (East Kent Regiment)—Guadaloupe, 1759.
King's own (Royal Lancaster Regiment)—Guadaloupe, 1759; St. Lucia, 1778.

Home.

Northumberland Fusiliers—St. Lucia, 1778.

Royal Warwickshire Regiment—Martinique, 1794.

Norfolk Regiment—Havannah; Martinique, 1794.

East Yorkshire Regiment—Martinique, 1762, 1794; Havannah; St. Lucia, 1778.

Leicestershire Regiment—Martinique, 1762; Havannah.

Royal Scots Fusiliers—Martinique, 1794.

Cheshire Regiment—Martinique, 1762; Havannah.

Royal Inniskilling Fusiliers—Martinique, 1762; Havannah; St. Lucia, 1778.

Gloucestershire Regiment—Guadaloupe, 1759; Martinique, 1762, Havannah; St. Lucia, 1778.

East Surrey Regiment—Martinique, 1794.

Duke of Cornwall's L.I.—St. Lucia, 1778.

Border Regiment—Havannah; St. Lucia, 1778.

Royal Sussex Regiment—Martinique, 1762; Havannah; St. Lucia, 1778.

South Staffordshire Regiment—Guadaloupe, 1759; Martinique, 1762

Dorsetshire Regiment—Martinique, 1794.

Prince of Wales's Volunteers (South Lancashire Regiment)—Martinique, 1762; Havannah; St. Lucia, 1778.

Welsh Regiment—Martinique, 1762.

Black Watch (Royal Highlanders)—Guadaloupe, 1759; Martinique, 1762; Havannah.

Oxfordshire and Buckinghamshire L.I.—Martinique, 1762, 1794; Havannah.

Essex Regiment—Havannah.

Northamptonshire Regiment—Martinique, 1762, 1794; Havannah.

Princess Charlotte of Wales's (Royal Berkshire Regiment)—St. Lucia, 1778.

King's Royal Rifle Corps—Martinique, 1762; Havannah.

Manchester Regiment—Guadaloupe, 1759.

Prince of Wales's (North Staffordshire Regiment)—Guadaloupe, 1759; Martinique, 1794.

York and Lancaster Regiment—Guadaloupe, 1759; Martinique, 1794.

His Majesty has also approved of the addition of the dates stated below to the honorary distinctions enumerated (which are already borne on the colours or appointments of the regiments concerned), in order to indicate for what particular operations these distinctions have been granted:—

Royal Scots (Lothian Regiment)—St. Lucia, 1803.

Royal Fusiliers (City of London Regiment)—Martinique, 1809.

King's (Liverpool Regiment)—Martinique, 1809.

Prince Albert's (Somersetshire L.I.)—Martinique, 1809.

East Yorkshire Regiment—Martinique, 1809; Guadaloupe, 1810.

Royal Welsh Fusiliers—Martinique, 1809.

King's Own Scottish Borderers—Martinique, 1809.

Cameronians (Scottish Rifles)—Martinique, 1809; Guadaloupe, 1810.

Royal Inniskilling Fusiliers—St. Lucia, 1796.

East Surrey Regiment—Guadaloupe, 1810.

King's (Shropshire L.I.)—St. Lucia, 1796.

Home

King's Royal Rifle Corps—Martinique, 1809.

Manchester Regiment—Martinique, 1809; Guadaloupe, 1810.

Prince of Wales's (North Staffordshire Regiment)—St. Lucia, 1803.

West India Regiment—Martinique, 1809; Guadaloupe, 1810.

In any case where a regiment has been awarded the same distinction, but with different dates, it will bear on its colours or appointments one distinction only with the dates.

Requirements for an Automatic Rifle.—According to *The Times*, the following conditions have been laid down for the guidance of inventors and others who may wish to submit to the War Office a design for an automatic rifle :—

The rifle should be as simple, strong, and compact as possible, and the mechanism should be well protected from the entrance of sand, rain or dirt, and should not be liable to derangement due to rough usage, exposure, or fouling. Cartridges may be rimless, and as regards ballistics the range for a *maximum* height of trajectory of 5½ feet must not be less than 800 yards. The weight of the bullet, which should be pointed, must not be less than 150, or more than 180 grains, and the calibre must be not less than ·27-inch or more than ·28-inch, the working pressure not exceeding 21 tons to the square inch at 80 degrees Fahr. The rifle must be as light as possible, and in any case it is not to exceed 9½ lbs. with magazine empty and without the bayonet. It must be capable of being used either as an automatic-loading or as a magazine weapon, the change from one to the other being rapidly and easily effected, and the bayonet must be attached to the fore end and not to the barrel.

Rifles submitted for consideration under the above conditions must reach the Director of Artillery at the War Office not later than 1st May, 1910, and must be accompanied by at least 300 rounds of ammunition for the purpose of a preliminary trial.

Mosquito Campaign in West Africa by Means of Traps.—In the *Archiven für Schiffs-und Tropen-Hygiene* (Band XIII., Heft 20, 1909), Dr. Külz describes an ingenious method which is employed in Conakry, French Guinea, for the destruction of mosquitoes. Dr. Blin, senior medical officer of the settlement, had by careful arrangements succeeded in destroying all the mosquito larvæ in the breeding places, but was greatly annoyed by mosquitoes which were blown into the settlement from neighbouring swamps. He, however, noticed that these mosquitoes took refuge during the heat of the day in land-crab holes, or hollows under the mangrove roots, protected from sun and wind. He, therefore, hit on the idea of making a number of holes, which he calls "trous-pièges," in order to trap the insects. Each hole for a trap is about 16 inches long, its axis making an acute angle with the surface of the soil; the opening is directed away from the prevailing wind, and not exposed to sunlight, shady spots under trees or bushes giving the best results. Mosquitoes begin to take shelter in these holes about 8 a.m., and remain till about 4 p.m. Destruction of the insects is begun about 2 p.m. Gangs of six natives are employed, each of whom carries a stick about 5 feet long, having a bunch of lighted tow or some absorbent material, saturated with paraffin oil, fixed at its end.

Home.

The bearer rapidly passes from hole to hole and thrusts the blazing torch into each. A torch lasts about ten minutes, and six trained men, using 30 torches, can burn out 500 holes in 1½ to 2 hours, with an expenditure of about five pints of oil.

The holes should be about 15 to 20 feet apart; if there is much vegetation, they may be placed somewhat closer. After ten to twelve days' use the soil absorbs some of the paraffin oil, the odour of which prevents the insects from entering the traps, and fresh holes must then be dug. One native, after a little practice, can dig 100 of these holes a day.

In order to get some idea of the value of this procedure, Dr. Blin counted the mosquitoes found in ten holes daily for fifteen days; the total number was 11,700. This was during the mosquito season.

The "trous-pièges" can also be used to capture mosquitoes for studying the prevalence of different species and other purposes. To effect this a muslin cylinder large enough to embrace the opening of the hole, with one end fastened to a glass jar, must be provided. The muslin cylinder is dropped over the opening, and the insects driven into the jar by pushing a fine twig into the trap-hole. A string can then be tied round the muslin to keep them imprisoned.

Dr. Blin has applied the same idea to use in the interior of houses. He constructed a pyramidal wooden box with side walls 16 inches in length, closed at the smaller end, which was 4 inches by 2½ inches in size, and open at the larger, 8 inches by 5 inches. A sliding door was provided to close the entrance. The outer surface of the box was painted dark grey and the inner black. In the morning Dr. Blin placed this box in a dark part of a room, where it was not exposed to draughts. About 3 p.m. he closed the door and pushed a piece of smouldering brown paper on the lid of a tin into the box, which is sufficient to destroy the mosquitoes.—*Contributed by the General Staff.*

Germany.

Heavy-Freight Automobile Competition, 1909.—In the Military Notes of the May number of the JOURNAL, the rules for, and the route to be covered by, heavy-freight automobiles, in the competition organised by the Military Authorities to take place in that month, were given, and we now give the results.

The competition took place under the superintendence of a detachment of communication troops between the 26th April and the 21st May, the route being from Berlin to Stuttgart and back.

The seventeen automobile vehicles which took part belonged to twelve different firms, of which only three (Argus, Erhhardt and Soest) competed for a Government subsidy, their competing in the race by the others was due to a desire to avail themselves of a good opportunity for testing some modification or improvement in their *matériel* and of proving the superiority of their workmanship.

The distance run was longer than in preceding years—2,352·6 kilometres (1,461½ miles); the competition lasted twenty-seven days, twenty of which were spent on the road. One hour each day before the vehicles started was all the time allowed for getting them ready (replenishing their store of combustible, lubrication, etc.), any time spent over and above this was counted in the length of time on the road.

The course selected ran through various kinds of country, level plains, hilly and mountainous regions, with long and stiff gradients up to 13 in 100; some of the roads were even under repair. The 1,461½ miles were run in 218 hours, which gives a mean speed of 6 miles 1,300 yards per hour, the maximum being 7½ miles, and the minimum 5 miles 500 yards. The bad state of the roads, the local police regulations, and the organisation at the same time over part of the route of another competition by the Imperial Automobile Club, explains why the speed reached remained, relatively speaking, low.

The mean day's stage was 73 miles, 200 yards; the longest from Stuttgart to Tauberbischofsheim, over bad roads, was 87 miles 500 yards.

The trains and single wagons were formed into two columns, which followed at a distance of about 1,000 yards, with a distance of between 10 to 20 yards between the vehicles.

The greater part of the time, however, at least after starting from Frankfort, this order was not, as a matter of fact, adhered to, because it was often necessary, on account of the dust, to increase the distance apart to 200 yards or even more. The result was, naturally, a considerable increase in the length of the columns, which caused one of the great advantages of mechanical-traction columns to be lost, that of having a column of medium length for transporting the same weights.

The weight of the vehicles varied from 3 tons 17 cwts. 3 qr., (Mulag) to 4 tons 7 cwts. 2 qrs. (Dürkopp), the mean gauge being 5 feet 7 inches, minimum 5 feet 1 inch, the maximum 5 feet 11 inches. All the motors were of at least 35-H.P., although this condition was only laid down by the military administration to start from 1st April, 1910. The consumption of combustibles varied considerably; the lowest was that of the Gaggenau firm, 249½ gallons of benzine for the 1,461½ miles; that is less than ·880385 per 1,094 yards for a useful load of 6 tons, which puts the cost of transport of a ton at 1¼ centimes per kilometre.

All the vehicles, with the exception of that of the Soest firm, which withdrew from the competition on the first day, returned to Berlin on the 21st May.

This excellent result shows that heavy freight-carrying automobiles are fit to be employed for victualling work in time of war, under all conditions. The military authorities have deserved well of the automobile industry by their system of subsidies—5,000 francs (£200) down and 1,250 francs (£50) annual contribution for the expense of upkeep per vehicle. It is thanks to this assistance that the employment of mechanical traction has commenced to extend in Germany, and will only develop more and more. The Army will, moreover, be the first to benefit by it, and in case of mobilisation will by the end of the present year have at its disposal at least 300 subsidised motor wagons.

The Technical Military Academy at Berlin.—The provisional regulations of 26th April, 1906, for the work and course of instruction at the Technical Military Academy at Berlin have been replaced by the new definite regulations of 21st June, 1909. The Academy will, as in the past, comprise three divisions: the "Armament" division, the "Engineer" division, and the division of "Communications." Each of these divisions will carry for the future four years of study instead of three, on the lines of the Superior Civil Technical School, where the time of study is spread over eight sessions of six months. The greater number of the officers leave the Academy at the end of the second year; the superior instruction of the third and fourth years is only given to a small number of officers according to their aptitude and according to the needs of the Military Administration. In addition, to each of the year's study of the "Armament" division is attached a foot-artillery course.

The total number of officers detailed for the first two years' course with the "Armament" and "Communications" divisions is not to exceed 166, that for the last two years 50.

Every officer who has followed the course at the Academy for two years is noted by the Director and recommended according to his aptitude for the third and fourth year course, and after that to fulfil the duties which require expert technical knowledge (Experimental Committees, Engineer Committees and detachment for experiments with the "Communication" troops, etc.). Leave is granted annually to 6 officers of the fourth year for tours for study of four to six weeks in Germany, Europe, or the United States.

The other provisions of the former regulations are retained in their entirety.—*Revue Militaire des Armées Etrangères.*

Numbers and Distribution of the Officers of the Reserve and Landwehr in the German Army.—The *Militär-Zeitung* of the 10th July, 1909, gives a detailed return by arm, by Corps, and by rank of the Reserve officers of the Prussian Army. There are altogether 16,077 Reserve officers thus divided:—

	Field Officers.	Captains.	Lieutenants.	Sub-Lieutenants.	Total.
Infantry of the Guard	2	89	103	455	651
Infantry of the Line	—	339	719	6,131	7,189
Chasseur and Rifle Battalions ...	—	43	75	274	392
Machine Gun Detachments ...	—	1	7	30	38
Cavalry of the Guard	—	52	50	70	172
Cavalry of the Line	3	264	306	1,476	2,049
Field Artillery	—	142	207	2,842	3,191
Foot Artillery	—	22	51	474	547
Pioneers	—	23	65	339	427
Railway Regiment	—	15	30	293	338
Telegraph Battalion	—	21	54	103	178
Balloon Battalion	—	2	1	1	4
Automobile Detachment	—	2	8	41	51
Train	—	33	108	709	850
Total	5	1,048	1,786	13,238	16,077

The distribution of officers between the different Corps is very variable. Thus, the infantry regiment No. 39 (Düsseldorf), the best provided for, possesses 89 reserve officers, whilst the worst off, the regiment No. 176 (Thorn) only counts 19. In the Chasseur battalions, the numbers vary from 40 in the battalion No. 7 (Bückeburg) to 21 in the battalion No. 4 (Bitche). In the cavalry, one passes from 52 officers in the Hussar

Regiment No. 7 (Boun) to 1 officer in the regiment of Chasseurs à Cheval No. 5 (Mulhausen). In the field artillery, very well provided on the whole, we find 78 officers in the regiment No. 10 (Hannover) and only 12 in the regiment No. 34 (Metz). Lastly, the foot artillery shows 52 in the regiment No. 2 (Danzig, Swinemünde, Pillau) and 17 in the regiment No. 8 (Metz).

It may not be without interest, therefore, if we complete these *data* by the following tables, drawn from the different lists of the German Army for 1909 :—

Total Number of Reserve Officers in the German Army.

	Prussia.	Saxony	Wurtemburg.	Bavaria.	Totals
Infantry, Chasseurs ...	8,170	808	506	1,263	10,847
Cavalry	2,221	234	108	171	2,734
Field Artillery	3,191	291	139	398	4,019
Foot Artillery	547	21	—	106	674
Pioneers and Communication Train ...	998	50	23	112	1,183
Train	850	49	32	104	1,035
Totals	16,077	1,453	808	2,154	20,492

Total Number of Officers of the Landwehr of the German Army.

	Prussia.	Saxony.	Wurtemburg.	Bavaria.	Totals.
Infantry, Chasseurs ...	5,341	623	349	671	6,984
Cavalry	831	56	40	60	987
Field Artillery	1,148	83	68	145	1,444
Foot Artillery	199	26	3	64	293
Pioneers and Communication Train ...	303	39	14	54	410
Train	313	27	27	73	440
Totals	8,135	854	501	1,068	10,558

—*Revue Militaire des Armées Etrangères*

Recruiting Statistics for 1907.—The number of young men of the class of 1887 (1907) inscribed on the rolls was 377,879. Taking into account men adjourned from previous classes, who number 122,720, we get a total of 500,599 *inscrits*, who have been classed as follows:—

Struck off for various causes	13,244
Rejected as unfit	121,986
Adjourned	128,351
Failed to report themselves	43,749
Appointed to 1st Category (Active Army)	97,381
,, 2nd ,, ...	2
,, 3rd ,, (Territorial Militia) ...	95,886
Total	500,599

Germany.

Of the 97,381 men selected for the Active Army, 75,979 have joined their Corps and been distributed as follows :—

Infantry	47,898
Cavalry	7,616
Artillery	13,643
Engineers	3,640
Royal Carabineers	1,230
Hospital and Commissariat Companies	1,952
Total	75,979

The difference of 21,402 men between the 97,381 men allotted to the Active Army and the 75,979 actually incorporated in the ranks, is due to the fact that a certain number of men were already serving under the Colours at the time of the sitting of the Recruiting Board, to the number of students authorised to delay their period of service, to the withdrawal of men incorporated in the Customs' service, and to the number of *inscrits* residing abroad, etc.

Under the Education Return, the *inscrits* for the Active Army are classified as follows :—

69,961 or 71·8 per cent. able to read and write; 653 or 0·67 per cent. able to read only;

26,767 or 27·49 per cent. unable to read or write.

—*Bulletin de la Presse et de la Bibliographie Militaires.*

Italy.

Re-engagement of Corporals and Privates.—In view of the probable adoption of two years' service, the Italian Parliament has been considering the consolidation of the lower ranks of the Army, and the Act published on the 19th of July last fixes the conditions for the re-engagement of corporals and soldiers.

This Act lays down :—

1. Re-engagement for a year without a bounty for corporals of all arms who, after their term of normal service, request to remain under the Colours in view of competing for the rank of non-commissioned officer, and for soldiers who wish to compete later on for one of the employments giving a right to re-engagement with a bounty;

2. The re-engagement for three years with a bounty for corporals and soldiers of the 1st Class of the disciplinary companies, the penitentiary establishments, musicians, corporal-farriers, etc., to the extent of three successive re-engagements and without limit of age.

This bounty is annual; it amounts to 200 francs (£8) for the first re-engagement, and for 300 francs (£12) for the two following.

The Carabineers, whether non-commissioned officers or not, are admitted to share in these arrangements.

Every re-engaged promoted non-commissioned officer passes under the law of 19th July, 1906, modified in 1908, on to the list of non-commissioned officers.—*Revue Militaire des Armées Etrangères.*

Russia.

Russian Recruiting Statistics.—The height of about 27 per cent. of the Russian recruits in 1907-08 was 5 feet 6½ inches; 26 per cent., 5 feet 4¾ inches; 18 per cent., 5 feet 8¼ inches; 16 per cent., 5 feet 3 inches; less than 1 per cent., 5 feet 1 inch. There were 1,245 recruits whose height was 6 feet 1½ inches; 128 of 6 feet 3¼ inches; and 10 of 6 feet 5 inches. Over 37 per cent. of the recruits were illiterate. Of 275,000 recruits in 1907 who were able to read or write, only about 6,000 had passed the medium of higher standards of education, 35,000 the lower standard, 180,000 could read and write, 54,000 could only read. Out of a total of 456,000 recruits in 1908, 380,000 were Russians; there were 30,000 Poles, 18,000 Jews, 12,000 Finns, 8,000 Tartars, 6,000 Bashkirs, and 5,000 Germans recruited in the Russian Army in 1907.

Courier Corps.—There is a branch of the Russian Army known as the Courier Corps, and sections of it are attached during war to the Staff of the Commander-in-Chief of the army in the field and to each army corps. The Commander-in-Chief is supplied with 8 officers and 12 non-commissioned officers, and each army corps takes half that number. Their duties are the carrying of important despatches, and as orderlies to general officers commanding. Only highly educated, experienced and trustworthy officers and non-commissioned officers are enlisted into this corps, and when on duty each courier is supplied with a pass, which allows him the use of horses, drivers, and carriages without payment. All station commandants are ordered to do everything in their power to assist these couriers in their journeys, and depôts of post horses, drivers, and carriages are stationed on all roads leading from Army Headquarters to the nearest railway station; these horses and vehicles are reserved solely for the use of the Courier Corps.

Aviation in Russia.—In Russia there is now being finished a dirigible balloon for which the inventor, M. Kostovitch, claims great things. Conceived before the Zeppelin airship, the Russian dirigible also has an absolutely rigid body, the framework being made of a special material invented by the designer, and this he asserts to be far superior to wood or aluminium. The main propeller shaft runs through the centre of the vessel, and for this arrangement great efficiency is claimed. The Kostovitch airship is about 200 feet long and 40 feet in diameter, with cone-shaped ends. The rudder is mounted in front and the propeller in the rear. Two platforms underneath the body provide accommodation for the crew, engines and stores. So light is the material employed that the vessel will, it is said, have a much greater lifting power than any other rigid type of vessel. At the same time, the outer shell has greater strength, according to the inventor. Side planes are fitted for the purpose of dynamic flight. By a secret device it is said that gas can be rapidly pumped from the balloon chambers and stored in other vessels under pressure. The interior of the ship is then filled with air, and thus the vessel at once becomes of the heavier-than-air type. Neither gas nor ballast is sacrificed by this change, and it can be effected very quickly. Thus, when in the air and travelling at high speed, the vessel can be converted into a flying machine. When buoyancy is required the gas is restored to the balloon, and the vessel becomes lighter than air. The engine is also the invention of M. Kostovitch. It is of the eight cylinder type, and can develop up to 150-H.P., which is deemed sufficient to give speeds up to sixty miles an hour. M. Kostovitch is particularly anxious to get the matter taken up in England, as he states that this type of vessel is best suited for her requirements.—*Army and Navy Journal.*

Creation of a Superior School of Gymnastics and Fencing for Officers. —Founded by the *Prikaze* of the 13th August of this year, this School has for its object: 1. To train officer-instructors, practical and theoretical, for the Army and the School itself; 2. To establish logical and uniform methods for the teaching of gymnastics and fencing in all branches of the Army; 3. To study and to carry out practical experiments in all branches and with all inventions in the domain of training and physical development in Russia and abroad.

The School is placed under the orders of the General Commanding the Military District of St. Petersburg, who is the Inspector-General. It comprises a permanent staff and a *personnel* of officer-students. The permanent staff is comprised of:—

a. The Commandant of the School, a field officer appointed by the Minister with the assent of the Inspector-General, and responsible directly to this latter; he is on the same footing as the Commandant of a regiment;

b. The officer-instructors, who are selected by the Commandant of the School among the subaltern officers who have given proofs of special proficiency in gymnastics and fencing; they are under the direct orders of the Commandant of the School, and are on the same footing as Commanders of Companies; they wear the uniform of their Corps, on the roster of which they continue to count.

c. The Professors: 1 Professor and 4 Assist-Professors for gymnastics, 1 Professor and 4 Assist-Professors for fencing, 1 Professor of statistics and history of physical training, 1 Professor of anatomy, physiology and hygiene; at first, these Professors, selected by the Commandant of the School, may be civilians, and even foreigners, of established reputation; gradually, however, these positions will be filled by old pupils of the School;

d. The Medical Officer;

e. The Officer Commanding the detachment of soldiers.

The officer-pupils are recruited from among the subaltern officers (up to the grade of Second-Captain, inclusive) of all arms, in the proportion of two per Army Corps, of three per Military District for the Corps not included in the Army Corps, of two for the Cossacks of the Don: the total effective being 100 officers. These officers are to be volunteers, as far as possible, well reported on, in perfect health, 30 years of age or more, and who have served in a unit for at least three years. At the end of the course, they must serve for two years at least in a regiment or as professor at the School. Those among them who have shown marked aptitude can be retained at the School for a year in the capacity of instructors, so as to prepare themselves for the position of professor; but their number is not to exceed six.

Russia.

The duration of the course is ten months, and is divided into two terms: the winter term, from the 1st October to 31st May; the summer from the 1st June to the 1st August, which is passed in camp.

The theoretical part of the instruction includes anatomy, physiology, hygiene, statistics and history of physical training; the practical part includes gymnastics, as applied to the physical training of troops, and also includes physical work in the gymnasium, with the object of giving the instructors the necessary suppleness, agility and confidence, field gymnastics, outdoor exercises and games, fencing, and sword and bayonet exercises.

The programme of the course is settled by the "Committee for the Training of the Troops," and approved by the Inspector-General of the School and the Minister of War.

A detachment of soldiers is attached to the School provisionally; the School will at first be located in a private building, but it will have at its disposal the *Salle d'Escrime* and the other analogous establishments of the Guard Corps and of the 1st St. Petersburg district.

The creation and organisation of this new School for perfecting the training of officers shows the interest now taken at Headquarters in the development of corporal exercises and the physical training of the Army.—*Revue Militaire des Armées Etrangères.*

Spain.

Composition and Organisation of the Expeditionary Force at Melilla.—In consequence of the incident of the 9th July and the battles which followed, the Spanish Government was compelled to send to Melilla successive reinforcements, which had the result of placing at the disposal of General Marina an effective strength of nearly 35,000 men.

The operations relating to the despatch of these divers reinforcements were carried out with a rapidity and method which merit some notice.

Mobilisation of the Chasseur Brigades.—On the 9th July, the day when the news of the fresh aggressive movements of the Riffians was received, the order was given for the mobilisation of the brigade of Chasseurs stationed in Catalonia (recalling to active service the number of reservists necessary to raise the effective strength of each battalion from about 380 to 800), and it was further decided to add to this brigade:—

3 Mountain Batteries;
1 Squadron of Cavalry;
1 Company of Sappers;
2 Telegraph Companies;
1 Military Administration Section;
1 Mountain Ambulance Section.

In spite of the troubles which broke out at Barcelona on account of the war, the mixed brigade commenced its embarkation on the 12th July, and by the 20th the whole was concentrated at Melilla.

In its turn, the Chausseur Brigade of New Castile was mobilised under similar conditions by an order of the 19th July, and its conveyance to Malaga, then to Melilla, took place between the 21st and the 27th July. Finally, the Chasseur Brigade of Andalusia, which received the order to mobilise on the evening of the 27th July, was ready to embark on the 29th and was entirely concentrated at Melilla on the 2nd August.

Spain.

Mobilisation of the First Division.—The battle of the 27th July having made the necessity evident of still further strengthening the Expeditionary Corps at Melilla, the Government decided to send out a complete division. The infantry for this division was constituted from two brigades, viz., that of Vittoria, belonging to the 12th Division, and that of Oviedo-Léon belonging to the 13th Division. Each of the four regiments mobilised two battalions, raised to an effective of about 1,000 men each by calling out the reservists, and drawing upon men serving in other regiments. In addition to these eight battalions, the division comprises :—

3 Field Batteries armed with the Schneider-Canet 7·5 cm. Q.F. gun (14·3 pounders), drawn from the 2nd Regiment of Field Artillery, in garrison at Vittoria;
2 Two-gun Machine Gun Sections;
1 Regiment of Cavalry (the Chasseur Regiment, Alphonso XII., stationed at Vittoria), formed of 2 squadrons of 160 horses each;
1 Sapper Company, 125 men strong;
1 Telegraph Company, 100 men strong;
1 Administration Company;
1 Hospital Company;

in all, an effective of about 10,000 men. The division is under the command of General Sotomayor.

The operations commenced on the 28th July, and the division was transported to Melilla between the 3rd and 9th August.

Three days later there arrived at Melilla some cavalry reinforcements, formed by the Princess's Hussar Regiment, with a strength of 3 squadrons of 100 horses each.

Summing up, in the space of a month, the Spanish troops detached to Melilla, which, under normal circumstances, reach an effective of from 6,000 to 7,000 men, have been raised to a total strength of from 34,000 to 35,000 men, made up of: 33 battalions of infantry, 9 squadrons, 16 batteries, and the various technical services.

Different Services of the Expeditionary Corps.—In addition to the troops forming part of the organic units (the Chasseur Brigade, 1st Division, etc.), the Government placed at the disposal of General Marina all the additional elements necessary for an active campaign :—

Communication Troops.—A Balloon Company, with two balloons and a hydrogen park; a field wireless telegraphy section (*matériel* furnished by a German firm); a photographic section; and two sections of railway sappers.

Hospital and Sanitary Service.—Independently of the ambulances attached to each of the Chasseur brigades and to the 1st Division, the Expeditionary Corps disposes of an important reserve of *matériel* and medical stores which have been collected at Melilla, of apparatus for the sterilisation and ozonation of water, of a locomobile disinfecting stove, and a portable incinerating oven, etc.

Administrative Services.—To provide for the necessities of reprovisioning the army of operations at Melilla, there were organised (by Royal Decree of 11th August) two mounted military administration companies: one for field battery, the other for convoy.

The *Field Bakery Company*, subdivided into 3 equal sections, disposing each of 2 portable field ovens, has an effective strength of 5 officers, 190 men, 135 horses, and 36 carts.

The *Convoy Company*, also subdivided into 3 sections, has a strength of 5 officers, 160 men, 150 horses, and 36 carts. Another division was also held in readiness, which would be placed under the orders of General Ampudia, who commands the 14th Division at Corunna, and who is one of the youngest Generals of division in the Spanish Army.—*Revue Militaire des Armées Etrangères.*

Switzerland.

Effective Strength of the Cavalry.—According to the last Report of the Military Department, the effective strength of the cavalry since the beginning of the new century has varied as follows: in *1901*, 4,641 men; *1906*, 5,162 men; *1909*, 5,113 men. After a relatively-speaking considerable increase, the numbers now show a very small diminution. This does not hold good as regards the rest of the Army, which, from an effective strength of 151,766 men in 1901, fell to 142,000 in 1906, and then to 138,798 men in 1909, a diminution in round numbers of 13,000 men. This result appears to be due to a greatly increased strictness in the examination of the recruits, and consequently it is now proposed to relax the regulations somewhat.

The Remounts of the Federal Army.—From reliable information as to her resources, Switzerland can count upon the following numbers for the remount service of the Army:—

According to the statistics of 1908, there are at present in the country 6,630 horses fit for the use of officers, 6,444 for non-commissioned officers, 22,558 horses for light and 39,193 for ordinary draught; a total of 74,825 horses fully fit for military service. In addition, there are 18,511 heavy draught horses, which can be utilised in case of necessity, and 2,231 mules fit for mountain service.

At the present time there are at the remount depôts 772 horses, principally intended for the use of officers. In addition the Government possesses 11,237 cavalry and artillery horses *en depôt* with the farmers or ready for riders, who would mount them when called out or in case of mobilisation.—*Revue de Cavalerie.*

Target Indicator.—The Swiss Artillery have recently adopted a reflector to indicate on manœuvres the target aimed at by them. It consists of a powerful acetylene lamp mounted on a tripod three feet high, with a hollow cylinder eighteen or twenty inches long and one and a half feet in diameter, fixed on top of the lamp. The interior of the cylinder is divided up by a series of vertical and parallel plates one inch apart and extending the full length of the cylinder, one end of which has a removable cover with a handle on it. This cover has a concave reflector on its inside surface, with a small hole in the centre. The light is flashed on to the target by directing the cylinder on to the latter by a sighting apparatus through its long axis, while the cover is held by a man about eight inches in rear of the cylinder, and keeps the shadow of the small hole on the sight in a similar way to the working of a heliograph. The lamp is only used

Switzerland.

when there is no sun. The reflection of the sun's rays is very powerful, and satisfactory results have been obtained from its use during training and manœuvres.

United States.

Inspector-General's Report.—In his annual report, dated 17th September, 1909, Brigadier-General E. A. Garlington, Inspector-General, states that inspection of the military establishments during the past fiscal year has been more complete than in any year since the Spanish-American War. The present scheme of inspections limits the inspection of garrisons and stations to once a year, and the funds allotted to the Department for mileage are based upon this scheme. This should be changed so as to provide for at least two visits to each station during the year—one inspection should be confined to an examination into post administration and the other include practical tests of the troops as fighting units.

Reports of inspection of 117 of the garrisoned posts inspected during the year show 4,148 irregularities and deficiencies on the lists furnished the post commanders by the inspectors—an average of about 35 per post. As compared with the figures for the preceding year, the average number of defects and irregularities and deficiencies reported per post has increased about 40 per cent. These irregularities and deficiencies, except those submitted to the Chief of Staff, refer more particularly to the failure on the part of responsible officers to comply with Army Regulations and existing orders. This failure seems to be due in part to the frequent change or modification of Army Regulations or existing orders.

It is believed that the Army is greatly in need of increase of the Infantry and Field Artillery and reorganisation of the Cavalry. Legislation to this end would, no doubt, be facilitated by quartering the troops where they would come closely in contact with the people, abandoning isolated posts, stationing the troops in thickly settled communities and keeping them at their stations for longer periods. Armies maintained in the tropics should, as far as possible, be stationed at an altitude of from 1,500 to 5,000 feet above the level of the sea. As a rule, the Philippine Scout companies have made a very creditable showing, and this fact speaks well for the efficiency and capability of their officers. Details on extra and special duty are largely accountable for the large percentage of absenteeism from drills and other military instruction. The remedy for this would seem to be a service corps, recommended in the last annual report.

The practical instruction of the troops as a whole during the past year seems to have been worthy of commendation, yet the standard attained in field training and general efficiency as a mobile force is not altogether what it should be. Both officers and men are deficient in tactical instruction, and the standard reached is not what we have a right to expect. Major Bundy, Department of Texas, expresses the opinion that the deficiencies in tactical training, so far as the Infantry is concerned, is due very largely to the presence in the Infantry Drill Regulations of what is known as the normal attack. The entire subject of gunners, and the qualifications necessary for this grade, should be carefully gone over by the General Staff. A very creditable state of discipline was maintained, as a rule, throughout the Army generally, but there can be no doubt that the dicipline and efficiency of troops were lowered by the continued absence of so many company officers and the resulting frequent changes of company commanders. Target practice is, as a rule, conscientiously carried out, and the records, in the main, are accurately kept, though there seems to be a somewhat general opinion that they might easily be falsified. To minimise the chance or opportunity for falsifying the target records, several recommendations have been made by inspectors. It is recommended that an allowance of at least twenty rounds of rifle ball cartridges per man per year be authorised for use in practical tests by inspectors to determine whether organisations have attained the proper efficiency and whether individuals have the ability in the use of the rifle shown by their classification at target practice.

There is a general complaint that the Service is more or less crippled by reason of the large percentage of officers constantly absent from their commands. It should be determined whether the valuable services rendered the Government by the officers now on detached service compensate for the loss of efficiency in their own organisations. The lists of instructors and other details at the U.S. Military Academy and at the Service schools should be scrutinised and reduced to the lowest limit. It is well known that such lists will grow beyond reasonable proportions unless held down by independent authority. It would be well to make the experiment with one Pacific transport of relieving the transport quartermaster and placing the master of the ship in control, giving him a competent purser. If the experiment proved successful, several officers could be returned to duty with their regiments, the expensive offices maintained on all transports abolished and more space for passengers procured.—*Army and Navy Journal.*

CORRESPONDENCE.

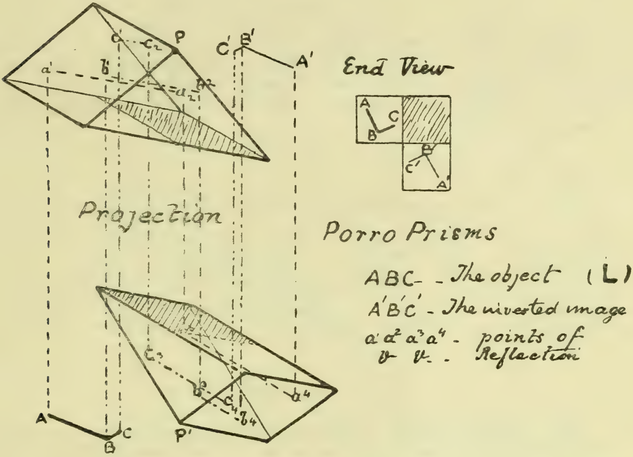
PRISM GLASSES.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—Prism glasses are in such general use, while the principle of their construction is so little known, nothing on the subject being published, that a brief explanation may prove of interest to many readers of the JOURNAL.

A prism glass is a short telescope. In ordinary hand telescopes the object glass forms an inverted image of the object; this inverted image is erected by a pair of lenses, forming an erected image at their focus, and this erected image is viewed through a magnifying eye-piece. Thus the total length is the sum of the focal distance of the object glass, of the length of the erecting lenses from focus to focus, and of the focal length of the eye-piece.

Now in the prism glass a pair of inverting prisms is placed between the object glass and its focus, by which the direction of the rays from the object is inverted, and thus an erect image is formed at the focus which is viewed through a magnifying eye-piece. Erecting lenses being dispensed with, and the path of the rays being doubled on itself, the length of the telescope tube is considerably reduced.

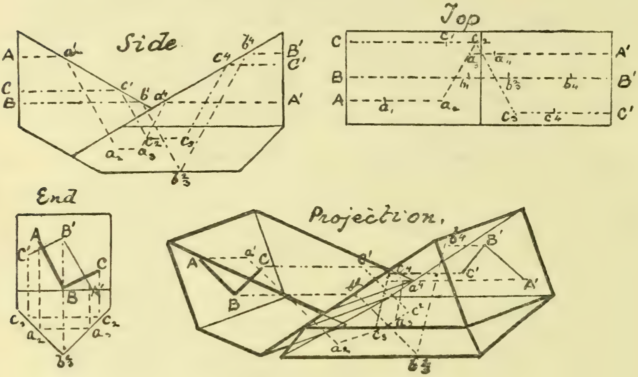


Projection and end views of the ordinary Porro prisms are shown here. The prisms are right angled, of solid glass, the sloping sides being the reflecting surfaces. The prisms are fixed in the telescope tube, so that the shaded surfaces are opposite and parallel, and the axes of the prisms are at right angles to each other.

The object A.B.C. (the letter L) is in thick lines, the image $A^1B^1C^1$ is viewed by the eyepiece. The paths of the rays from object to image are shown by dotted lines, and the points of reflection by small letters. Thus, taking A, the top of the L, the ray is reflected at right angles from a^1 on the left face of the inner prism to a^2 on the right face, from which it is reflected at right angles to a^3 on the further face of the outer prism, and then to a^4 on its nearer face, and finally to A^1, and so with the other points in the objects. The end view shows object and image without distortion. The necessary rounding of the angles of the prisms to fit them into the tubes is not shown in the sketches.

The path of the rays is folded on itself, as it were, and this reduces the length of tube, which would otherwise be necessary; the reduction is twice the distance separating the angles of the prisms, or twice PP^1.

There are several modifications of the Porro Prism in use by different makers. In one the two prisms are brought together and are either cemented together at the shaded surfaces, or the double prism is worked out of one piece of glass. The double prism is then fixed close to the eye-piece, and the convergence of the rays from the object glass admits of a considerably smaller prism being used—and the single prism is less liable to accidental disturbance—while the form of the tubes is less unsightly and clumsy than in the ordinary Porro glass.



The Hensoldt Prism.

The "Hensoldt" prism—a singularly ingenious modification—is shown in the second projection, as well as in the side, end, and top views, with the paths of the rays from object to image explaining the inversion. It consists of two planes, sloping inwards at 30° on the top of a right-angled prism. The right-hand plane and prism are worked out of the solid; the left block is a separate piece of glass. The line joining the centre of the square ends lies in the axis of the tube, and this enables a slender and sightly tube to be used, having only a shallow projection at the inner side, into which the prism fits. In this glass, half the field is reflected to the left from the right face of the prism and half to the right from the left face, forming one clear image, in which no line of separation is perceptible. The width of the prism is half that for a Porro of the same field. In every case the rays from object to image are reflected at four points. To illustrate the action of the Porro prisms, take a piece of semi-transparent paper, mark the letter L on it, turn the paper over from left to right, and the letter will be inverted thus ⅃ in one sense—this is what the inner prism does; then turn the paper over once more at right angles, from top to bottom, and the letter will be again inverted in the second sense ⅂, and thus completely inverted, and this is the action of the outer prism.

W. H. Mackesy,
Lieut.-General.

26th April, 1909.

NAVAL AND MILITARY CALENDAR.

NOVEMBER, 1909.

1st (M). 15th Hussars embarked at Bombay in R.I.M.S. *Dufferin* for Durban.
„ „ 1st Bn. Wiltshire Regt. embarked at Bombay in *Dufferin* for Durban.
4th (Th.) 2nd Bn. Cameron Highlanders embarked in *Soudan* at Ching-Wang-tao for Madras.
14th (S.) 15th Hussars arrived in R.I.M.S. *Dufferin* at Durban.
„ „ 1st Bn. Wiltshire Regt. arrived in R.I.M.S. *Dufferin* at Durban.
15th (M.) Ming Manoel of Portugal arrived on State visit to the King.
20th (Sat.) 150th Anniversary of Hawke's defeat of the French in Quiberon Bay.
21st (S.) XIIIth Brigade R.H.A., and XVIIth Brigade R.F.A. embarked at Durban in R.I.M S. *Dufferin* for Bombay.
„ „ 3rd Bn. Royal Fusiliers embarked at Durban in *Dufferin* for Mauritius.
22nd (M.) 4th Hussars embarked at Durban in Transport *Braemer* for England.
25th (T) Launch of Second-class Cruiser *Newcastle* from the Elswick Yard.
„ „ Launch of Third-class Cruiser *Blanche* from Pembroke Dockyard.
26th (F.) 3rd Bn. Royal Fusiliers arrived at Mauritius.
27th (S.) King Manoel left England.
29th (M.) Launch of the First-class Battleship *Thuringen* from the Weser Yard, Bremen, for the German Navy.
30th (T.) 2nd Bn. Loyal North Lancashire Regiment embarked at Mauritius for Bombay.

FOREIGN PERIODICALS.

NAVAL.

Argentine Republic.—*Boletín del Centro Naval.* Buenos Aires: September, 1909.—"The North Pole." "Some Considerations on Naval Hygiene." "Magnetic Rays." "The Gaultier Topometrograph." "New Ballistic Tables." "Fishery Regulations." "Modern Battleships."

Austria-Hungary.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 12. Pola: December, 1909.—"Deep Sea Diving" (*concluded*). "A Contribution to the Question of the Type and Armament of Modern Fleets." "Naval Artillery and the Struggle Over the Adoption of High Explosives Shells." "Protection of Battleships against Underwater Attacks." "Abstract of the Report of M. Chautemps on the French Naval Artillery." "New Form of Masts for Battleships." "A Division of Four Units."

Brazil.—*Revista Maritima Brazileira.* Rio de Janeiro: September 1909.—"Torpedo Discharges." "Submarines." "Practical School of Artillery" (*continued*). "The Stability of Smokeless Powders." "The Brazilian Navy."

CHILI.—*Revista de Marina.* Valparaiso: August, 1909.—"The Merchant Marine." "Description of Professor Fleming's Cimometer and its Application to the Marconi Wireless Telegraphy System." "Some Points on Evaporators." "Internal Combustion for Ships of War." "Manual of Meteorology Applied to the Foretelling of Cyclones." "Fighting Value of Ships of War."

FRANCE.—*Revue Maritime.* Paris: September, 1909.—"The Position of the Officer in the Army and Navy." "The Metals, Petroleum and Coal of New Caledonia." "The English Two-Power Standard." "The *Dreadnoughts* (Their System of Fire Direction) and the Comparativo Force in the North Sea."

October, 1909.—"The Measurement of the Density of Sea Water by Means of Gauges Totally Immersed." "The Position of the Officer in the Army and the Navy" (*concluded*). "The Right of Capture According to the Resolutions of the Conference of London on Maritime War." "Tactical Principles Deduced from the History of Maritime Wars." "Types of Ships and Composition of a Fleet for Powers of the Second Rank."

La Marine Française. Paris: November, 1909.—"The Enquiry into the State of the Navy" (*continued*). "A Splendid Naval Cruise: Impressions of America." "The Dockyards: Their Organisation and Output."

La Vie Maritime. Paris: 10th November, 1909.—"The Distribution of the Naval Forces." "The New Head of the Technical Section." "The Firing at the *Iéna*." "The New Programme for the *Inscription Maritime*." "Useless Scribbling." "Launch of the *Mirabeau*." "Cruise of Submersibles." 25th November.—"The Firing at the *Iéna*." "The French Navy." "Useless Scribbling." "One Would Like to Know."

Le Yacht. Paris: 6th November, 1909.—"The Results of the Firing at the *Iéna*." "Yachting Notes." "The Disposition of the Guns on Board Battleships." 13th November.—"New Constructions." "Yachting Notes." "Naval Artillery Engineers." "The Autonomy of the Ports." 20th November.—"New Constructions" (*concluded*). "Yachting Notes." "The Reception of Lieutenant Shackleton by the Geographical Society." "The Brazilian Battleships of the *Minas Geraes* type." 27th November.—"The Commission of Classification." "Yachting Notes." "The *Nassau* and Her Sisters."

Moniteur de la Flotte. Paris: 6th November, 1909.—"Explosive Shells." "Future Battleships." "The Central Administration." "The Navy in Parliament." 13th November.—"The Question of Projectiles." "The Artillery Engineers." "The Pilots of the Fleet." "The Navy in Parliament." "The Medal for Morocco." 20th November.—"The Admission Programme for the Naval School." "Battleships Compared." 27th November.—"The Feeling of a Reform." "The Central Administration." "Some *Desiderata* for Officers." "Long Range Firing at the *Iéna*." "The Navy in Parliament."

GERMANY.—*Marine Rundschau.* Berlin: December, 1909.—"The German-Chinese High School at Tsingtau." "The Spanish Operations in the Riff Territory." "The Creation of a Naval War Staff in the English Navy." "Prince Ito." "The Development of the War Harbour at Wilhelmshaven." "The 11th Ordinary Meeting of the Shipbuilding

Association." Exchange of Views on the Essay—"Tsushima from the French Point of View."

ITALY.—*Rivista Maritima.* Rome: October, 1909.—"The Battle Flag Presented by the City of Rome to H.M.S. *Roma.*" "The London Naval Conference." "New Formulæ for the Calculation of the Deflection and Inclination of Gun Sights." "Italian Commerce in 1907." "The Italian Grand Military Manœuvres of 1909."

PORTUGAL.—*Revista Portugueza, Colonial e Maritima.* Lisbon: September, 1909.—"The Contouring Topographical Expedition in Africa." "Short Notice of Singapore." "Genealogical and Biographical *Data* of Some Fayal Families." "A Portuguese Inscription in Ormuz." "The Colonial Movement."

Annaes do Club Militar Naval. Lisbon: October, 1909.—Has not been received.

SPAIN.—*Revista General de Marina.* Madrid: November, 1909.—"The Gyroscopic Compass." "Details in Practical Navigation." "Construction, Manning and Organisation of Modern Ships of War." "The *Personnel* in the Great Navies." "The Art of War."

MILITARY.

AUSTRIA-HUNGARY.—*Danzer's Armee-Zeitung.* Vienna: 4th November, 1909.—"The Army and the Magyars." "The Necessity of a Reorganisation of the Army." "Russia and Prince Ito's Death." "Austria's First Dirigible Balloon." "The Discipline in the Swiss Army." "For Swedish Gymnastics." 11th November.—"We Can Wait." "Russia as Enemy." "The Turkish Fleet." 18th November.—"The Racconigi Meeting: Italian Policy." "The Present Condition of the Russian Army." "An Important Mathematical Discovery." 25th November.—"Military Concessions." "The Racconigi Meeting: The Future *Casus Belli.*" "The Value of Orders and Distinctions of Honour." "Kuropatkin's Statement of Accounts." "Tyrolean Railway Questions."

Streffleur's Militärische Zeitschrift. Vienna: November, 1909.—"The Exercises of Infantry from Tent Camps." "The Infantry Attack According to the Spanish Regulations, 1908." "The Military Operations of Turkey in Asia Minor, 1908-09." "The Spanish Battles in Morocco." "The Russo-Japanese War: Criticism and Observations by some who took part in them." "The Literary Activity of the War-Archives Department, 1784-1909." "Guns for Fighting Dirigible Balloons." "Distance Measuring with the Field Gun M.5."

Kavalleristiche Monatshefte. Vienna: November, 1909.—"Prize Essay." "The Cavalry Divisions in the German Kaiser Manœuvres, 1909." "From the Diaries (1859-1866) of Graf zur Lippe-Deissenfeld" (*continued*). "German Equitation in the 19th Century." "Divisional Cavalry." "Military Rides in the Neighbourhood of Buda-Pesth, 1909." "Tactical Problems for the Cavalry Officer."

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th October, 1909.—"The Reform of Military Justice in

France." "Q.F. Field Artillery with Shields." "Military Institutions of the United States." 31st October.—"The Reform of Military Justice in France" (*concluded*). "Q.F. Field Artillery with Shields" (*continued*). "Military Institutions of the United States" (*continued*). "Reorganisation of the Danish and Norwegian Armies."

FRANCE.—*Journal des Sciences Militaires.* Paris: 1st November, 1909. —"Pay and Retirement." "The Coast Question." "War and Compulsory Service" (*continued*). "For the Great Force of the Army and Better Health of the Nation" (*continued*). "The Sanitary Service in the Field" (*continued*). "Cavalry Support of Artillery." "Letter of an Italian Officer to Captain G. Cognet." 15th November.—"Coast Questions" (*concluded*). "The Balance of Ideas in the Field Artillery." "On Replenishing Ammunition." "War and Obligatory Service" (*continued*). "Cavalry Support of Artillery" (*concluded*). "To the *Joyeux* (Slang Term for the Men of the African Battalion)."

Revue d'Infanterie. Paris: October, 1909.—"Battle Communications in the Infantry." "Battle Firing." "The Russian Army: Instruction for the Construction of Infantry Entrenchments." "The Military Salute in France and Abroad" (*concluded*).

Revue de Cavalerie. Paris: October, 1909.—"Study on Sedan." "Our Cavalry in the Next War (General von Bernhardi)." "Cyclist Units Abroad." "A Study on the Precociousness of the Cavalry Horse" (*continued*).

Revue d'Artillerie. Paris: September, 1909.—Has not been received.

Le Spectateur Militaire. Paris: 1st November, 1909.—"The Covering of a Strong Fortress in 1815: Belfort and the Corps of the Jura." "Strategical Consideration on the Campaign of 1800 in Italy" (*continued*). "Principles which should Serve as a Base for the Organisation Laws" (*continued*). "Covering Manœuvres" (*concluded*). 15th November.—"The Covering of a Strong Fortress in 1815: Belfort and the Corps of the Jura" (*continued*). "Strategical Considerations on the Campaign of 1800 in Italy" (*continued*). "Invasions at Montargis." "Principles which should Serve as a Base for the Organisation Laws" (*continued*).

Revue Militaire Générale. Paris: November, 1909.—"The English Army in a European Conflict" (*concluded*). "A Manœuvre in the East." "Gun and Rifle Fire on Land and at Sea." "Automobile Manœuvres."

Revue d'Histoire. Paris: November, 1909.—"The Dromedary Regiment" (*continued*). "The Campaign of 1813: The Preliminaries." "The Prussian Armies after the Wars of Deliverance" (*concluded*). "The Mitrailleuse in 1870" (*continued*). "The War of 1870-71: The National Defence in the Provinces."

Revue Militaire des Armées Etrangères. Paris: November, 1909.—"The United States Army in 1909." "The Reforms in the Russian Army since the War in Manchuria." "The Service of the Train in the Field in the German Army Corps."

GERMANY.—*Militär-Wochenblatt.* Berlin: 2nd November, 1909.—"Meeting of the Military Society of Berlin, 27th October, 1909." "Sebastopol." "The Commanding Generals of the German Army, 1889 to 1909" (*continued*). "Of What Use is Prize Steeple Chasing to the

Officer?" 4th November.—"The Italian Grand Manœuvres." "Distance Ride for the Kaiser's Prize." "Shorthand Writing and the Army." 6th November.—"Once More Fortress Manœuvres." "Two Hundred and Fifty Years Ago: The Great Elector in Upper Pomerania; Siege of Demmin, October-November, 1659" (*continued*). "The Italian Grand Manœuvres" (*concluded*). "Recruit Training." 9th November.—"The Military Element in Childhood and Schiller's Youth." "The Campaign of 1815 and the Military Reputation of the Belgians and Dutch." "Problems for Musketry Instruction." 11th November.—"Garibaldi in France, 1870-71." "The New Turkish Military Pensions Law." "On the Deepening of Service Instruction in the Cavalry." "The Position of the Field Artillery in the Manœuvres." 13th November.—"Obituary Notice: General-of-Infantry Graf von Verri della Bosia." "What Lessons are to be Learnt from the Fighting Round Port Arthur in the Matter of Coast Fortifications" (*concluded*). "Garibaldi in France, in 1870-71" (*continued*). "The New Turkish Military Pensions Law" (*concluded*). 16th November.—"The New Issue of the Infantry Drill Regulations." "Garibaldi in France, in 1870-71" (*concluded*). "Non-commissioned Officers' and Men's Libraries." 17th November.—"The Strengthening of the French Field Army." "Riderless Field Batteries at the Manœuvres." 20th November.—"Reminiscences of a Former Cavalry Officer of General-of-Infantry von Schlichting." "Two Hundred and Fifty Years Ago: Maxen" (*continued*). "The Strengthening of the French Field Army" (*concluded*). 23rd November.—"Something about the Fighting Value of Cavalry of the Present Day." "Firing Experiments at Tangerhütte" 25th November.—"French and German Manœuvres." "Two Hundred and Fifty Years Ago: The Electoral Brandenburg Troops under Major-General von Quast in Holstein: Landing on Fünen Island: Battle of Nyborg, November, 1659" (*continued*). "The Question of Black Troops." 27th November.—"Obituary Notice: Colonel Bernhard von Eoten." "People and Army." "Two Hundred and Fifty Years Ago" (*concluded*).

Artilleristiche Monatshefte. Berlin: October, 1909.—"The Result of the Prize Essay." "What Lessons are to be Drawn from the Experiences of the War in East Asia, 1904-05 for the Use of the Artillery in Field War?" "More Demands for the Next Firing Regulations for the Field Artillery." "The Artillery in the New Cavalry and Infantry Regulations." "The Austro-Hungarian Shooting Instruction for Field Guns." "Foot Artillery Observations."

Jahrbücher für die Deutsche Armee und Marine. Berlin: November, 1909.—"New French Tactical Literature." "Fortress War in Theory and Practice." "The Kaiser-Manœuvres, 1909." "The Autumn Manœuvres of the French Army, 1909." "The Fighting in the Tyrol in 1809."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: September, 1909.—"Heavy Field Artillery." "Detonating Fuzes and Detonators." "Systems of Construction of Modern High Velocity Artillery." "The Braccialini Horizontal Base Position-Finder." "The Determination of Range and Position of Masked Batteries." "A Differential Gear with Cylindrical Wheels." "A Tri-phase Apparatus for Obtaining any Integral or Fractional Number of Turns in a Rotor."

Rivista Militare Italiana. Rome: 16th November, 1909.—"Our Infantry Tactics" (*concluded*). "The Importance of Training N.C.O.'s." "Between Land and Sea." "Notes and Comparisons Between the Forces of Italy and Austro-Hungary." "Our Military Establishments." "The Military Decadence of the Most Serene Republic of Venice" (*continued*). "Tripolitana" (*continued*). "Some Historical Memories of the Mont Cenis District." "Kassala." "Notes on the Military Organisation of the Swiss Confederation."

SPAIN.—*Revista Técnica de Infantería y Caballería.* Madrid: 1st October, 1909.—"Napoleon and the Peninsula War." "The Principal Arms and the Auxiliaries in the Struggle for Positions in the Field" (*concluded*). "The Present Times and the Grand War." "Report on the Musketry Course by Infantry First-Lieutenants at the Central Musketry School in 1907" (*concluded*). "The Roll of Honour under the Empire" (*concluded*). "Recollections of the War of 1870-71." "Aerostation in Our Army." 15th October.—"La Revue de l'Armée Belge." "Recollections of the War of 1866." "The Infantry in the French Army." "Our Army in the War of Independence." "Culture and Work." "Aerostation in Our Army" (*continued*). "Military Technics."

Revista Científico- Militar Bibliotéca Militar. Barcelona: 25th November, 1909.—"The Operations from the 1st to 15th of November." "A German View on the War at Melilla." "The Equation of the Modern Army." "Lessons from the Russo-Japanese War Applied to the Instruction of Infantry." "For the Benefit of the Future of the Army."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: November, 1909.—"Electric Searchlights." "The Adjustment of the Bridle." "The Battalion in Foreign Regulations." "The Ehrhardt Armoured Automobile for the Pursuit of Balloons."

UNITED STATES.—*Journal of the Military Service Institution.* Governor's Island: September-October, 1909.—"Preparation for the Military Service." "Physical Training for Officers." "The Regular Army in the Civil War." "Observations during Leave in Europe" (*concluded*). "A Regular Army Reserve." "Types and Traditions of the Old Army."

Journal of the United States Artillery. Fort Monroe: July-August, 1909.—"Plans for the Defence of Coast Artillery Districts." "The Problem of Security and Information in Reference to Coast Forts." "Military Reasons for Fortifying the Panama Canal." "Reminder Lists for Service Target Practices." "The Vulnerability of Observing Stations." "Notes on German Coast Defence." "Rosenberg Generators." "Determination of Longitudinal Deviations at Target Practice from Photographs of Splash and Target." "A Ship Study of H.M.S. *Dreadnought*."

Journal of the United States Cavalry Association. Fort Leavenworth, Kansas: September, 1909.—"The Battle of Gettysburg." "International Concours Hippique." "Machine Guns with Cavalry." "Pack Horses for Machine Guns." "Field Firing for Company and Troop." "Use of the Buzzer by Troops of the Line." "Native Scout Organisation."

Journal of the United States Infantry Association. Washington: September, 1909.—"The Army, the National Guard and the Nation." "A System for Determining Relative Efficacy of Fire." "Our Present Firing Regulations." "Observations and Field Firing." "Some Mistakes in Organisation during 1861 and 1862." "The Post Graduate Course for Line Officers." "Senior Line Officers and the School of the Line." "Should the Buzzer be Issued to Troops of the Line?" "The Present Problems: An Undelivered Address." "History of the 21st U. S. Infantry."

NOTICES OF BOOKS.

Fifty Years of it. By The Rt. Hon. Sir J. H. A. MACDONALD, C.B. London and Edinburgh: Blackwood & Sons, 1909.

There is nobody better qualified than is Sir J. Macdonald for chronicling the events of the fifty years which have all but elapsed since General Peel issued the call for Volunteers to enrol and organise themselves for home defence. During that long time the author of this very cheery volume has not only worked so as to make himself a thoroughly efficient Volunteer in every sense of the word; but he has helped, by pressure from the Volunteer Force, to introduce many greatly needed reforms into the Regular Army. Sir J. Macdonald was one of the first to join the Barristers' company of the Queen's Volunteer Rifle Brigade, formed in Edinburgh, in the old days when extreme rigidity and exactness of movement were considered to be all that could be required, either of the Regular or of the Volunteer, and when anything like simplicity of drill and manœuvre was carefully avoided and forcibly condemned. From almost the very first Lord Kingsburgh saw how matters might be improved, that discipline and fighting value did not depend upon many and elaborate movements, or upon the maintenance of the stiff and mechanical appearance of the individual soldier. In this book he tells us of how he set to work to improve matters, of the many disappointments and rebuffs he experienced, of the support and encouragement he received from the progressive party in the Regular Army and of the success which, by degrees and after long years, rewarded his efforts. Many distinguished officers have not failed to place on record how often tactical and other reforms have been introduced into the Army by the pressure exercised by and from the Volunteers, and to no man is more acknowledgment due for the common-sense now allied with drill and manœuvre than to Sir J. Macdonald. His book is, however, no mere record of his triumphs over red tape and over those who would have had us retain the wooden movements which were our long legacy from the days of Frederick of Prussia, but it contains reminiscences of old days, numberless good stories, and memories of many friendships formed in the Force for which he did so much, and in which he will long be remembered as one of its most distinguished officers. It would have been matter for genuine regret had Lord Kingsburgh not given us, in what should have been the year of its Jubilee, this very charming record of fifty years in the old Volunteer Force.

The Navy League Annual, 1909-10. Edited by A. H. BURGOYNE. Price, 2s. 6d. London : John Murray.

Of the making of Naval Annuals there seems no end; nevertheless we give a hearty welcome to the third issue of the Navy League Annual for 1909-10, and all the more so, as it not only contains a great deal of valuable information and interesting matter, but it is offered at a price sufficiently low to bring it within the reach of that rapidly increasing number of the public who take a greater interest in the Navy than was formerly the case, but who find it inconvenient to purchase the more expensive "Brassey" or "Jane." That the Annual is now recognised as a work of real importance is shown by the fact that the new edition has been brought out by the famous publishing house of John Murray, which fact alone may be accepted as the hall-mark of present and future success.

The first six chapters are devoted to the progress of our own and foreign Navies, which will repay the reader who is seeking information on that point. In Chapter VII. the Editor deals with the question of "Comparative Naval Strength"; in this regard he states that it is strange to have to chronicle that between the Christmases of 1908 and 1909 the British Navy will be in a position of naval superiority as against foreign nations never before attained. This is rather a disputable statement, for, relatively speaking, in 1904, before the *Dreadnought* era, and the scrapping of valuable ships, which began in that year, we were far stronger than we are to-day. Mr. Burgoyne, however, rightly points out that our preponderating strength of to-day can in no circumstances be accepted as a criticism of our effective forces of the immediate future. We owe our present position partly to the successful efforts made by Sir F. Richards and Lord Walter Kerr to build up our fleet to a safe standard of strength, and to-day, as far as *Dreadnoughts* are concerned, to good luck due to the delays in the advancement of foreign programmes, created by the advent of the *Dreadnought*, and in no way to the foresight or energy of the present Government. Luck for the moment has pulled them out of a very tight corner and saved the nation, for a brief spell, from a situation of peculiar danger. But the period of uncertainty abroad has now come to an end, and since the Annual was published, Germany has commissioned her first two *Dreadnoughts*, and others are being pushed on with feverish haste; the trials of the first two of the U.S. ships of this type have been successfully completed, and next year France will probably complete three of the *Dantons*. In fact, no matter what our building programme may be, there can be no question that the next twelve months will see the naval position, as far as we are concerned, much changed for the worse. As far as can be seen at present, most experts will agree with Mr. Burgoyne's views that nothing but a programme of eight armoured ships for the next two or three years, at least, can possibly save the situation for us, and any further delay or hesitation in building must involve us in the gravest risks. The Editor also deals ably and moderately with the protected cruiser and destroyer questions, and shows, as regards cruisers, how rapidly our older units are approaching the age limit, and he makes the moderate estimate that in view of the number of these vessels Germany is now constructing, seven or eight units a year will be none too many to meet the necessities of the case. He also dwells on the importance of providing vessels for "showing the flag," and, turning to destroyers, shows convincingly that if ten years is accepted, as is generally the case now, as the life of destroyers, that we possess but a bare equality with Germany—a very serious state of things indeed.

The chapter on "Comparative Strength" is followed by a series of interesting papers on naval subjects, all of which will repay reading. Lord Elcho contributes a short but inspiring note on the "Navy and Empire," and the necessity of a strong navy, if our Empire is to be maintained. "It was sea power," he remarks, "in years gone by that gave us the British Empire, and sea power alone can keep it for our children in that integrity we have maintained until now." Count von Reventlow, the well-known German naval expert, deals with the naval policy of Germany, which is of value, although evidently written for consumption by English readers; while another writer, Mr. Bywater, gives an extremely interesting account of the training of the German bluejacket, and he bears testimony to the spirit of deep enthusiasm which permeates officers and men alike. Though little is known abroad of the degree of excellence attained by the German gunners, competition is very high, and good shooting has its reward even to the extent of personal congratulations by the Kaiser. "Ship competes with ship for the first place in gunnery, not simply for the ephemeral triumph of squadron or fleet supremacy, but from an earnest ambition to be ready for the prompt pulverisation of the foe." Mr. Bywater has lived long in Germany, and the evident knowledge of his subject with which he writes lends additional weight to his remarks. An able and also well-known French writer, M. Loir, contributes a paper on "The French Need for Capital Ships," in which he points out the necessity for the immediate reorganisation of the French Navy and the construction of improved *Dreadnoughts*: "To hesitate any longer in this matter," he remarks, "will be for France the throwing up of all power upon the sea. . . . . It is essential because she has allies or friends."

A Japanese writer, Mr. Satou Kato, contributes an article on "The Mastery of the Pacific," which gives plenty of food for thought. He is an expert on international subjects, and his comments on the Anglo-Japanese Alliance will be read with interest. Other subjects dealt with are the "Evolution of Submarine Vessels," by M. Laubeuf, the great French designer of submarines; the "Popularisation of the Navy"; and the "Trend of British Battleship Design." Space, however, will not allow us to do more than draw attention to them; but we may say that they are all well written.

The Annual concludes with a number of valuable tables, notable among them being Table G, which gives the contemporary battleships of the chief naval Powers at various dates. It is peculiarly interesting, as it shows how different rivals have come to the front, and how some have then fallen back in the struggle for naval power. Another valuable table is the list of dry and floating docks capable of holding the latest and largest armoured war vessels.

Mr. Burgoyne is to be heartily congratulated on the extremely valuable work of reference he has produced, and we can only say that "Brassey" in the future will have to look to its laurels if it is to keep ahead of its youthful competitor. The illustrations of ships are most excellent, and as good as we have seen in any work of the kind.

PRINCIPAL ADDITIONS TO LIBRARY, NOVEMBER, 1909.

Story of the Russo-Japanese War, 1904-05, *from the Outbreak of the Hostilities to the* 24*th August,* 1904. By Lieut.-Colonel H. M. E. Brunker. 8vo. 5s. (Presented.) (Forster Groom & Co., Ltd.) London, 1909.

Military History for Examinations, December, 1909—*May,* 1910 : *Questions on the Russo-Japanese War,* 1904. By Lieut.-Colonel H. M. E. Brunker. Crown 8vo. 1s. (Presented.) (Forster Groom & Co., Ltd.) London, 1909.

Report on the Second Cavalry Staff Ride held by the Director of Staff Duties, 21*st to* 26*th June,* 1909. 4to. (Presented.) London, 1909.

Hints on Military Landscape Sketching. By Captain W. Allason. Crown 8vo. 2s. 6d. (Presented.) (Forster Groom & Co., Ltd.) London, 1909.

A Short History of the Chief Campaigns in Europe Since 1792. By General A. von Horsetzky. Translated by Lieutenant K. B. Ferguson, R.G.A. 8vo. 18s. (Presented.) (John Murray.) London, 1909.

Letters to "The Times" upon War and Neutrality (1881-1909), *with some Commentary.* By Professor T. E. Holland, K.C. 8vo. 6s. (Longmans, Green & Co.) London, 1909.

The Rifle in War. By Captain H. E. Eames, U.S.A. 8vo. (Presented.) (U. S. Cavalry Association.) Fort Leavenworth, Kansas, 1909.

All the World's Airships, 1909-10 (*Aeroplanes and Dirigibles*). By Fred T. Jane. Oblong 4to. 21s. (Sampson Low, Marston & Co., Ltd.) London, 1909.

Supply Manual (*War*). Crown 8vo. 6d. (Presented.) (Harrison & Sons.) London, 1909.

The Crimean Commission and the Chelsea Board. By Colonel Sir Alexander Tulloch. 2nd Edition. 8vo. (Presented.) (Harrison.) London, 1880.

The Strategical and Tactical Employment of the Medical Service, as Carried out in an Army Corps. By Lieut.-Colonel Maximilian Ritter von Horn. Translated by Lieut.-Colonel W. G. Macpherson, C.M.G., R.A.M.C. 8vo. 4s. 6d. (Presented.) (Harrison & Sons.) London, 1909.

The Question of Mounted Infantry. By a Rifleman. 8vo. (Presented.) (Hugh Rees, Ltd.) London, 1909.

Historical Records of the Denbighshire Hussars Imperial Yeomanry from their Formation in 1795 *till* 1906. Compiled by Colonel LL. E. S. Parry, D.S.O., and Engineer Lieutenant B. F. M. Freeman, R.N. 8vo. (Presented.) (Woodall, Minshall, Thomas & Co.) Wrexham, 1909.

RECENT PUBLICATIONS OF MILITARY INTEREST.

COMPILED BY THE GENERAL STAFF, WAR OFFICE.

OCTOBER, 1909. PUBLISHED QUARTERLY.

Communicated by the General Staff and reprinted by permission of the Controller of His Majesty's Stationery Office.

Continued from November JOURNAL, p. 1548.

CONTENTS.

PAGE.
Part II. Section I. Books 1675

PREFATORY NOTE.

This Pamphlet will be issued quarterly, in April, July, October and January. Its purpose is to draw the attention of Officers to British and Foreign publications of Military interest which are likely to assist them in their professional work. Copies of the pamphlet will be distributed to the Headquarters of Commands, Educational Establishments, Units and Reference Libraries.

PART II.

SECTION I.

NOTE.—1 *When the price is not given in Part II., Section I., it is not known.*
2 *In Part II., Section I., books whose titles are given in foreign languages as well as in English are published in those languages and are not translated.*

MEDICAL.

The Physical Condition of Men Qualified to Serve as One-Year Volunteers in Germany. (Ueber die Körperbeschaffenheit der zum einjährig-freiwilligen Dienst berechtigten Wehrpflichtigen Deutschlands). By Dr. H. Schwiening, assisted by Dr. Nicolai. 192 pp., with 15 graphic charts in text and 7 maps. 4to. Berlin, 1909. Hirschwald. 5/-.

This volume is No. 40 of the publications of the Medical Department of the Prussian War Office on subjects connected with the work of the Army Medical Service. Dr. Schwiening has charge of the Medical Statistical Department of the War Office and Dr. Nicolai is in medical charge of one of the regiments of Guards in Berlin. The material for their monograph is obtained from official sources and has been collected during 1904, 1905 and 1906 by special cards, which have been filled in at the time of the examination of one-year volunteer recruits and transmitted to the Prussian War Office. The Bavarian War Office co-operated with the Prussian War Office and forwarded the cards from Bavaria to it. The material, therefore, covered the whole of the German Empire.

The primary object of the investigation was to examine into the truth or otherwise of complaints to the effect that the secondary schools in Germany had an unfavourable influence on the physical development of the pupils, especially in connection with eyesight.

Qualifications to serve as a one-year volunteer is obtained in three ways: (1) By special certificate on leaving the secondary schools; (2) by passing a special examination before a qualifying committee; and (3) by the possession of special technical knowledge as a skilled artisan, and passing only an elementary examination in general knowledge. 80,454 cards were examined, but of this number only 52,640 were suitable for purposes of compiling comparative tables. Of these 50,407 or 95·7 per cent. belonged to the first class, 1,976 or 3·8 per cent. to the second, and 267 or 0·5 per cent. to the third. Of the 50,407 with school leaving certificates, 25,246 came from the "Gymnasien," 8,953 from the "Realschule," 6,791 from the "Realgymnasien," 4,026 from the "Oberrealschule" and 2,910 from the "Seminaries." Small numbers came from six other classes of schools, including 601 from agricultural colleges.

The authors have compiled numerous tables and statistics from the individual cards showing the proportion of recruits rejected from various causes in each of the schools, and have presented the facts in a series of admirably arranged chapters. Of the

52,640 the total number rejected as unfit was 18,406 or 35 per cent., and the highest percentage of rejections, 37·8, was amongst pupils of the "Gymnasium" class of schools, *i.e.*, the schools equivalent to our higher public schools, which train for the universities; the lowest percentage, 16·6, was amongst the pupils of agricultural colleges.

The influence of the age at which the pupil left school and of the length of time which had elapsed between the period of his leaving school and applying for military service, is also minutely examined. The author's conclusion is that the proportion of rejections increases with the age at which the pupil leaves school and also with the period that elapses between his leaving school and applying for military service. There is an interesting chapter on the degree of unfitness for service. Three degrees are classified, namely: (1) Defects causing only conditional unfitness; (2) defects causing unfitness for service except in the "Landsturm," and (3) defects causing total unfitness. The second degree gives by far the largest proportion of rejections, namely, two-thirds, and the third degree the least.

A chapter is devoted to a consideration of the diseases and defects causing rejection. The proportion of rejections on account of general weakness, including weakness of thoracic development, is overwhelming. It amounted to 36·4 per cent. of the total rejections, or 12·8 per cent. of all the recruits examined. If diseases of the lungs and pleura are added practically half of the rejections are due to general weakness and these diseases combined. The next highest cause of rejection is diseases of the heart and larger blood vessels, which show 14·7 per cent. of the total rejections and 5·1 per cent. of the total examined. Defective vision caused 10·3 per cent. of the rejections and 3·6 per cent. of the total examined. Other causes of rejection were in comparatively small proportions. Compared with ordinary recruits, the proportion of rejections for general weakness is practically the same, but heart diseases, diseases of the lungs and pleura and defects of vision are in much higher proportion among the one-year volunteers, namely 14·7 per cent., 4·5 per cent. and 10·3 per cent., as compared with 5·8 per cent., 1·9 per cent. and 4·4 per cent. Hernia, flat-foot and varicose veins, on the other hand, are in higher proportion among ordinary recruits.

A chapter on the distribution of the recruits according to place of birth is interesting in showing the proportion of these diseases in the different states and provinces. Among the one-year volunteers rejected on account of general weakness, by far the largest proportion were of Berlin birth, while Bavarians showed a very high proportion of rejections on account of heart disease. Silesia had the highest proportion of rejections on account of defects of vision.

Tables are given showing the heights of the one-year recruits according to schools, causes of rejection and places of birth, and the heights are also compared with those of ordinary recruits. The one-year volunteers are generally taller, as is shown in the following table:—

	One-Year Volunteers. Per cent.	Other Recruits. Per cent.
Under 61 inches	0·5	3·7
61 to 63 ,,	3·3	9·2
63 to 65 ,,	13·3	25·6
65 to 67 ,,	28·6	30·5
67 to 69 ,,	29·6	21·2
69 to 71 ,,	17·6	7·8
Over 71 ,,	6·9	2
Total	100	100

The greatest number of rejections as unfit was amongst the men under 61 and under 63 inches in height; as many as 34·9 per cent. of the smallest class and 22·2 per cent. of the next height being rejected on account of general weakness and lung disease. The tallest recruits came from Mecklenburg-Schwerin and Strelitz, 36·1 per cent. of their number being over 69 inches in height.

The opportunity is taken of testing the value of what is known as the Pignet coefficient of physical vigour, based on an index derived from height, weight and chest measurement. Pignet's coefficient is the figure obtained by subtracting the sum of the height and chest measurement in centimetres from the weight in kilogrammes.* Any figure under 10 represents very strong physique, 11 to 15 strong physique, 16 to 20 good, 21 to 25 moderate, 26 to 30 weak, 31 to 35 very weak, and over 35 altogether unsatisfactory physique. Although the percentage of rejections on account of general weakness and lung diseases increases in proportion to these figures in a marked degree, still there were as many as 68 rejections for these causes among the "very strong" and 294 among the "strong" and "good," while as many as 13,955 were fit for service whose coefficients according to Pignet were moderate or weak, 3,368 were fit with "very weak" coefficients and 857 with "altogether unsatisfactory" coefficients.

Many other anomalies and contradictions are disclosed in connection with the application of Pignet's formula to these recruits; and the chapter dealing with this subject is of value in many ways, although the results are of a negative character.

The volume closes with a long chapter by Dr. Nicolai on special observations regarding defects in the eyesight of the one-year volunteers, and with conclusions and summaries of results. The main point in the eyesight investigations is that the percentage of cases of myopia in the "Gymnasium" recruits is enormously greater than that of recruits from the village, elementary and middle schools. It is also much higher than that of recruits from the "Realschule." 47·8 per cent. of the "Gymnasium" recruits have defects of vision and 36·9 per cent. are myoptic. Dr. Nicolai's chapter is not confined to the examination of the 52,640 statistical cards alone, but is a monograph on the subject of visual defects generally in schools and gives the results of investigations both in Germany and other countries.

The volume represents a vast amount of labour, but Dr. Schwiening regards it only as a first instalment of the statistics which the German army medical authorities are collecting on the subject, and as insufficient at present for the purpose of drawing general conclusions.

---

* See Journal Royal Army Medical Corps, vol. xi., 1908, p. 105.

Qualities Affecting Fitness for Military Service. (Aptitude et accoutumance au service militaire.) By Méd. Maj. Dupeyron. 31 pp. 8vo. Paris, 1907. Maloine. -/10.

This is a lecture given in 1907 to the officers of the 83rd Infantry Regiment by the author. It contains details of losses by disease in peace and war; causes of rejection of recruits; hereditary influences and some other factors in the social life of France which affect the national fitness for military service.

The Hospitals of the Present Day in Germany and other Countries. (Deutsche und Ausländische Krankenanstalten der Neuzeit.) By F. Ruppel. 149 pp., with 206 drawings in text. 4to. Leipzig, 1909. Leineweber. 12/-.

This volume, by a German architect, gives descriptions and plans of several of the most modern hospitals in German cities, in Austria, Holland, France and England, and is a valuable work of reference in connection with hospital construction. It is the result of investigations and studies made by a special committee of construction previous to designing a new hospital for Hamburg. The British hospitals studied are the Royal Infirmary and New Fever Hospital, Edinburgh; the Western Infirmary, Stob Hill Hospital, the Maternity Hospital, Ruchill Hospital and Royal Infirmary, Glasgow; the Royal Infirmary, Manchester; the David Lewis and City Hospitals, Liverpool; and in London, the Brook Fever, King's and University College Hospitals.

The Voluntary Aid Detachments of the Red Cross in Germany. (Das Sanitätskolonnenwesen vom Roten Kreuz in Deutschland.) Edited by Prof. Dr. Kimmle. 355 pp. 8vo. Berlin, 1908. Carl Heymann. 6/-.

This volume is a series of thirty articles written by various members of the German Red Cross Society on subjects connected with the historical development of the voluntary aid detachments ("Sanitätskolonnen"), or with their organization, training and work generally. It is a volume which should be studied closely and read by everyone who is considering the organization of voluntary aid for sick and wounded in war in this country. It not only contains interesting historical facts, but is also a mine of information in the matter of details of organization, training and many other points with which organizers of voluntary aid will be confronted at the very commencement of their work. The first article is an introductory biographical notice of General von Viebahn and his work. Then follow papers on the historical development and present state of the "Sanitätskolonnen" in Baden, Bavaria, Hesse, Prussia, Brandenburg, Saxony, Würtemburg. In several of these, complete details are given of the equipment and clothing of the members, the transport and other material of the detachments, the cost of maintenance, organization, exercises and so on. In the article on the Prussian detachments there are some interesting tables showing a steady increase in the number of detachments from 1895 to 1907 in the several provinces of the kingdom. In 1895, for example, the membership consisted of 8,958 persons, a number which has increased year by year by steady increment till it has reached 25,654 in 1907 representing a ratio of 5·7 per 10,000 of male population in the former year and 12·9 in the latter. As no person liable to military service, except in the "Landsturm," may be enrolled in the voluntary aid detachments, and as physical fitness is one of the conditions of membership, all males between the ages of 20 and 39 are excluded, and the above ratios consequently represent a very much higher percentage of the population available for membership than appears at first sight. The author of this article states that in 1908 there were 840 voluntary aid detachments with a membership of 28,000 ready in Prussia to help in the care of sick and wounded in war as well as organized to help in saving life in time of peace. Of the different provinces Brandenburg, with a ratio of 27·8 per 10,000, shows the highest percentage of membership and Berlin with 4·3 the lowest.

Some general statistics for the whole of the German Empire given in a later article are also worth noting. In 1908 there were 1,514 voluntary aid detachments, with a membership of 53,000, organized for work in 460 towns and 640 country districts. These 53,000 are not men who have simply been through a course of first aid and then gone their way, but they are practically and thoroughly trained to undertake life-saving work independently, and are being continuously exercised by medical men. In 1907 they dealt with 91,701 accidents of greater or less importance, without counting the numerous minor cases which were not brought to notice.

Other articles deal with such subjects as the organization of voluntary aid detachments for ambulance work in large towns, plans and description of a drill hall or training establishment for the detachments at Nürnberg; a description of the accident aid-post at Gross-Lichterfelde; the voluntary aid detachments during the South-West African Expedition, with illustrated details of clothing, equipment, and arms of voluntary aid detachments for service in the Colonies; details of exercises and training; principles upon which the direction and organization of the detachments are based and the training and duties of detachment and section leaders; the necessity of training a *personnel* for care of sick and wounded as well as for stretcher-bearer work, with details of a course of training; the employment of voluntary aid detachments in connection with epidemics; the best way of utilising river boats or barges for transport of sick and wounded; and articles connected with the position of the detachment in relation to the laws of the country, Samaritan societies, conditions of fitness for service in the field, and the aims and objects of committees and meetings of the directors and medical officers of the detachments.

The articles are not written for the purpose of publishing bald details but are thoughtful and suggestive papers on the subjects with which they deal.

Manual of Military Hygiene for the Military Services of the United States. By Col. V. Havard. 481 pp., with 7 plates and 228 engravings. 8vo. New York, 1909. Wood. 16/-.

This manual is published under the authority and with the approval of the Surgeon-General of the United States Army. In his introduction, Colonel Havard points out how military hygiene is indissolubly bound up with discipline, and that to preserve the health of troops the action of regimental and company officers is quite as necessary as that of medical officers, a fact which has been exemplified in all modern wars. The Japanese in Manchuria, he says, did not discover any new system of sanitation, but they excelled in discipline, prompt obedience to orders and administrative ability. He repeats, however, the usual mistake that their ratio of sickness was reduced to a minimum never before reached by any large army in the field, mainly because he calculates on a strength of 700,000, which is probably more than double the average strength on which such calculations should be based, and does not take into consideration the duration of the campaign.

The arrangement of the volume is interesting and, in some respects, novel. After chapters on morbidity and mortality in military service and sickness in tropical countries, on diseases of the soldier, mosquitoes, parasitic diseases, and diseases "caused by immoral or intemperate habits," there are chapters on recruiting, exercise and training, marching, personal hygiene, water (including full descriptions of the newest field filters—the Darnall and the Ishiji [Eshitzi]), food (including chapters on field cookery, travelling kitchens and the ration), clothing, barracks, hospitals, air, ventilation, heating and lighting, disposal of waste products and garbage, soil, camp sanitation, disinfection and naval and marine hygiene. Extensive use is made of the experiences of recent wars, and there are many illustrations from reports on the Russo-Japanese War. The work is full of practical descriptive matter very much up to date, and is a valuable addition to the books that have recently been written with a view to instructing military officers in all matters affecting the health of their men. It goes much further and covers a wider extent of ground than similar books published for the use of European Armies.

NAVAL.

Nelson and other Naval Studies. By J. R. Thursfield. 374 pp., with index. 8vo. London, 1909. Murray. 12/-.

The only portions of this book which have not been published before are the preface and the study of "Paul Jones." In the former the author discusses at some length the vital importance of naval supremacy to Great Britain and the problems of home defence.

The latter is an interesting appreciation of the life and deeds of Paul Jones, and is largely based on Mr. Buell's biography of him.

The remainder of the volume consists of articles which have appeared in *The Times, The Naval Annual,* and other periodical publications. They are full of interest and of material for serious thought. Amongst these may be mentioned "The Strategy of Position," "The Attack and Defence of Commerce," and "The Higher Policy of Defence."

The Naval Annual, 1909. By T. A. Brassey. 426 pp., with numerous plates and diagrams and index. 8vo. London, 1909. Griffin. 10/6.

In view of the recent course of events and the interest which has been evoked in the progress of the Navies of the world, this year's *Naval Annual,* which is, as usual, divided into four parts, is of special interest.

Part I. commences with a review of the year's work in British and foreign Navies, with their comparative strength in tabular form. It also contains chapters on dockyard administration, alternative systems of propelling machinery, naval volunteers, the naval expansion of gunnery, and manœuvres carried out during the year.

In Part II. which contains alphabetical lists of British and foreign ships with plans, the leading particulars of ships are, for the first time, given on the plates.

Part III. gives armour and ordnance tables, and reviews, as far as is possible, the progress made in production and development, and the general trend of opinion as regards advance in this section.

Part IV. contains the First Lord's statement, the Navy Estimates at home and abroad, the programme of shipbuilding and a return of gunlayers' tests and battle practice. Lord Brassey contributes a paper on recent naval construction and a note on the Forth and Clyde Ship Canal. A letter on national defence, written by Mr. Frederic Harrison to *The Times* in March, 1909, is also included. The other contributors are Mr. J. Leyland, Mr. A. Richardson, and the Marquess of Graham.

As a book of reference on naval matters this volume maintains the high standard of previous years.

Fighting Ships. By F. T. Jane. 491 pp., with numerous plans and illustrations. Fol. London, 1909. Sampson Low. 21/-.

In this year's issue of "Fighting Ships," special attention has been paid in Part I. to the German fleet, and the present appearance of many of its ships is shown by means of photographs. As far as possible particulars of the new German warships are given and they vary considerably from those hitherto published. The editor, whilst admitting that the exact correctness of these cannot be guaranteed, considers that in the main they will be found to be approximately accurate.

Every type of man-of-war to be found in the world's fleets is represented, with particulars of its construction, armament and speed and photographs of auxiliaries take the place of the representations of fast liners in former issues. Part I. also contains plans of destroyers and torpedo boats, and generally deals with these craft in greater detail than formerly. The illustrations throughout this part of the book, which are very numerous, are extremely clear and interesting.

Part II. contains a valuable article on "Protection of Battleships against Submarine Attack," by Professor W. Hoogaard; and Mr. C. de G. Sells again contributes a paper on "The Progress of Warship Engineering." A silhoutte index of merchant ships concludes this useful book of reference.

The Naval Pocket Book, 1909. Edited by G. S. Laird Clowes. 968 pp., with index. 12mo. London, 1909. Thacker. 7/6.

This annual publication retains the same form as previous editions. It contains classified lists of, and details with regard to, the Navies of all nations, their guns and small arms, notes on torpedoes, a list of dry docks at home and abroad, giving their measurements, and trial trip tables and tables for the conversion of foreign weights and measures. It concludes with rough plans of various types of battleships and cruisers, showing their armour and armament.

As a handy book of reference on naval matters it maintains its former high standard.

ORGANIZATION AND ADMINISTRATION.

Supply Services in the Field. (Alimentation en Campagne.) Official. 76 pp. 8vo. Paris, 1909. Charles Lavauzelle. -/6.

This publication replaces that issued in June 1900.

After giving a general summary of the respective responsibilities of the higher commanders and of officers of the supply corps, it deals with the question of supply under the two broad headings of "Organization" and "Work in the Field." Special orders and instructions for general officers commanding divisions and larger units follow, whilst at the end of the volume are appendices giving the scale of rations, forage and fuel under varying conditions.

As regards arrangement the new volume differs but little from its predecessor of nine years ago, but the trend of modern ideas has necessitated the introduction of material alterations under the old headings, and the embodiment of fresh instructions to meet altered conditions of organization. As regards the "general summary of responsibilities," the respective duties of commanders and of supply officers are far more clearly defined than formerly, but the regulations, though emphasizing the importance of commanders and their supply officers being in close touch, empower the latter to act largely on their own initiative, and authorise them to depart, if needs be, from the instructions issued by the former.

Under the heading of "Organization," the chief innovation is the introduction of fixed supply units for an army, in addition to, but apart from, those belonging to army corps. These are: an administrative convoy, composed of two sections for each army corps; an army bakery, consisting of one field bakery per army corps; a cattle park, and various auxiliary convoys. The organization of supply units for army corps and divisions is practically the same as formerly. The rations and forage now to be carried for all arms (except cavalry) are:—

	Rations Days.	Oats Days.
(1) Reserve	2	1
(2) Regimental wagons	2	2
(3) Army corps administrative park	2	2
(4) Army administrative park	2	2
Total...	8	7

In addition to the eight days' meat ration included in the above, there will be four days' meat supply on the hoof.

The old regulations provided for rations of two descriptions only, viz., the increased scale ration and the normal ration. The new regulations include a third, namely, the reserve ration, which is not to be consumed without special orders. This reserve ration comprises 10½ ozs. of "galetta" (special bread biscuit), 10½ ozs. of preserved meat, 3 ozs. of sugar, 1¼ ozs. of coffee in tablet form, 1¾ ozs. of soup and ¾ dram of brandy. These are issued to the troops prior to their departure from the place of mobilisation, and are carried partly on the man and partly in the first line transport.

In the cavalry the following reserve rations are carried:—

"Galetta"	1 day
Sugar and Coffee	3 days
Meat and soup	1 day
Brandy	1 day
Oats	4½ lbs.

The 4½ lbs. oats may be consumed as soon as camp is reached, but in this case they must be replaced from the daily issue. Mention is made of the new mobile field kitchens which may be issued to certain army corps at the rate of one per unit, and instructions as to their use are given.

Under the second main heading of "Work in the Field" are included additional instructions for officers entrusted with supply duties, and for the employment and revictualling of the new army administrative convoy.

The special instructions to divisional and higher commanders are amplified, and the points with regard to which supply officers should act in consultation with general officers commanding are more clearly defined.

Appendix I. gives as formerly the number of rations allowed for all ranks, but the scale of substitutes has been much increased.

Appendix II. deals with the forage. The scale of issue remains unchanged, but, apparently through an oversight, the scale of substitutes has been omitted.

Appendix III. gives the fuel ration. The issue of wood has been diminished; that of coal has been increased.

Appendix IV. gives the tobacco issue.

Several appendices which appeared in the old regulations, notably that dealing with the rations to be issued prior to entraining, &c., have not been reproduced in the new volume.

The Army and its Cadres. (L'armée et ses cadres.) By A. Messimy. 195 pp. 8vo. Paris, 1909. Chapelot. 2/-.

The writer was a member of the Chamber of Deputies at the time when the law dealing with the cadres of the Army was under discussion in the House. He claims that in the framing of such a law, questions affecting the supply and promotion of officers cannot be considered apart from problems of organization and in the present volume he gives the full text of, and discusses at length, three proposed laws laid by him before the House, it being in his opinion, essential that they should be discussed *pari passu* with the law dealing with cadres.

These three proposed laws legislate respectively for the following:—

(1) The supply of officers.
(2) Promotion.
(3) Retirement.

As regards the first, he points out the many inconveniences of the present system, and endeavours to evolve one which, whilst affording a similar training to all who aspire to become officers, admits of commissions being obtained as formerly through the ranks, as well as by entrance to the "Grandes écoles."

The method of promotion advocated is one of seniority combined with special advancement by selection. It is not, however, proposed to advance a selected officer by granting him several years' accelerated promotion at one time, but that at the end of each year he should be considered as having served a certain number of months longer in the rank which he holds than is actually the case, and that his seniority should be varied accordingly.

As regards retirement, the chief innovation in the proposed law is that after twelve years' service a certain number of officers should be permitted to leave the active army and become officers "de disponibilité." Such officers would receive special pecuniary advantages, but their military obligations would be greater than those of officers of the ordinary reserve.

The volume is instructive, and its interest is increased by the fact that the question of the supply of officers in our own Army is now claiming close attention.

The Colonies and Imperial Defence. By P. A. Silburn, D.S.O., M.L.A., Natal, late Major, Natal Permanent Forces. 360 pp. 8vo. London, 1909. Longmans, Green. 6/-.

The author has carefully studied the question of Imperial Defence, and his views as a late member of the Natal Permanent Forces and as a practical politician are entitled to consideration. Roughly speaking, Mr. Silburn is against small Colonial and self-owned Navies and also against the existing system of monetary grants. The former, he considers, are likely to lead to secession while the latter, unless the amount granted (and that, in his opinion, is quite impossible) is surplus to the Colonial Defence Vote, means the weakening of the Empire's defences. Mr. Silburn believes that the withdrawal of such grants will be more then compensated for by the strengthening of Colonial Militias and by adequate defences for Colonial harbours. He is in favour of a proportion of the Colonial Militias being available for service in other parts of the Empire, and estimates that more than 115,000 men for this purpose could be raised in the different large self-governing Colonies.

Finally, the author urges the desirability of establishing an Imperial Council of Defence consisting of:—

3 members to represent the Navy;
2 members to represent the Home-serving Army;
2 members to represent the Indian Army;
1 member to represent Australia;
1 member to represent Canada;
1 member to represent South Africa; and
1 member to represent New Zealand.

To follow the arguments in favour of the various conclusions arrived at is impossible in the limited space available, but it may be noted that Mr. Silburn apparently has a special predilection for coast defences, which he occasionally describes as "commanding" certain seas, which he believes would go far towards rendering secure the Imperial trade routes. Many of these defended ports might, he thinks, be cheaply garrisoned by training the natives of Africa as garrison gunners.

An Imperial Military System. By Capt. D. I. Macaulay. 19 pp. 8vo. London, 1909. Clowes. -/6.

This short article puts forward suggestions as to how, in the author's opinion the Colonies can most effectually assist Great Britain in the organization of a system of Imperial defence. Our Imperial military system, he considers, must depend on two main considerations—the geographical structure of the Empire and our Imperial policy, the latter of which conforms to the former. With regard to geographical considerations alone, the ideal Imperial military system would take the form of an Imperial Navy, separate national defence forces for purely defensive purposes, and expeditionary forces which are necessary to complete the offensive action of the Navy. Though connected at all times by the Imperial General Staff, the expeditionary forces should be National in times of peace and Imperial in war, when united by the Navy. Owing to the expense, he considers that none of the self-governing provinces could maintain a local Navy that would be of any practical assistance, but that they could maintain expeditionary forces which, owing to their strategic positions, would solve the difficulty of reinforcing British garrisons in any of the dependencies touching the Indian Ocean or the Pacific.

The National Defence system of Great Britain could then be directed to training forces for the peace garrisons of the dependencies, to creating such local defence forces as would give complete freedom of action to the Navy, and to maintaining a two-Power standard fleet in European and Atlantic waters.

As regards India, the author is of opinion that the time must come when an Indian Ocean Fleet will be as much a *sine qua non* for the defence of India as is an Indian Army, and that consequently the maintenance of such a fleet might be regarded as India's normal contribution to the offensive power of the Empire, without reducing the strength of the land forces which she at present maintains.

The author claims that the system he has outlined has advantages as compared with any scheme in which the Colonies take part in naval defence by contributions or by local Navies.

Universal Service. By Col. Sir C. M. Watson. 31 pp. 8vo. London, 1909. Rees. -/6.

This little pamphlet is a *résumé* of some of the arguments for and against the system of voluntary service, conscription, and universal service, with special reference to our requirements. The principal advantages and disadvantages of each system are first briefly discussed and summarised. Universal service as applied in Germany and Switzerland is then shortly described and its application to Great Britain considered.

The author considers that the advantages accruing from universal service, both to the Army and to the nation, far outweigh the few minor inconveniences that might be experienced by individuals, and puts his case forward in a very succinct manner.

Invasion and Conscription. By J. A. Farrar. 127 pp. 8vo. London, 1909. Unwin. 1/-.

The writer puts forward what purports to be the civilian idea of conscription; but his views as regards the conflicting ideas held by soldiers appear to be somewhat out of date. His arguments force one to the conclusion that he is one of the school which favours the Navy and Army being tied to our shores regardless of what happens to our Colonies and our prestige on the Continent. For the defence of the former he advocates the hiring of Chinese or other mercenaries. History will not bear out his faith in treaties, nor do the lowest class of criminals appear to be the most suitable recruits for the Army, the requirements of which are gradually reaching a higher intellectual and moral standard. His arguments, although far from convincing, are clearly put and worth reading.

Guide for Officers and N.C.O.'s of the Territorial Force. By Capt. J. Atkinson. 112 pp. 8vo. London, 1909. Gale and Polden. 2/-.

This small handbook is intended as a book of reference for officers and men of the Territorial Force. It contains extracts from Territorial Force Regulations, King's Regulations, and various other official text-books, and embraces a wide field from appointment and enlistment to mobilization and funerals. Each phase is treated separately and very briefly.

The tactical portion of the book is confined to two sections, entitled "On the March" and "Protection" consisting of four and twelve pages respectively. Owing to this condensation we find several definite statements inserted which require certain qualifications as regards prevailing conditions. These give the false impression that "sealed pattern" formations may still be regarded as the general rule.

POLITICAL.

Austria-Hungary. By Geoffrey Drage. 846 pp., with numerous maps and statistical tables. 8vo. London, 1909. Murray. 21/-.

This book is the result of *data* collected by the author during a period extending over many years. It is not produced merely as a result of the present position of affairs in the Near East, but to meet a permanent demand for a clear authority on the numberless economic and political problems peculiar to Austria-Hungary.

The political, commercial, financial and industrial aspects in Austria are first dealt with, followed by a similar presentation of these subjects in respect to Hungary. Affairs "common" to both portions of the Monarchy are then discussed, followed by chapters on the racial question, the annexed provinces, and finally the Balkan position.

There are probably not many individuals in this country, military or otherwise, who have any very clear knowledge as to the meaning or possible consequences of the statements which appear daily in the newspapers on the varied questions of the racial problem in Austria-Hungary, the Parliamentary crisis in Hungary, the independence party, the Pan-Slavist agitation, the agrarian and bank movements, and so on.

The present book will give the reader an easily understandable representation of all these exceedingly complicated points.

From the Treaty of Frankfort to the Algeciras Conference. (De la paix de Francfort à la conférence d'Algésiras.) By André Mévil. 328 pp. 8vo. Paris, 1909. Plon-Nourrit. 3/-.

M. Mévil's work is almost exclusively a denunciation of the foreign policy pursued by Germany since the war of 1870, a policy which, in the writer's opinion, has always had for its one aim and object the isolation and subsequent annihilation of France. M. Mévil seeks to show how Bismarck, as the originator of the anti-French policy, directed all his efforts towards ensuring that France should find herself standing alone and unaided by any other Power did she enter on a fresh conflict with Germany and also how the Chancellor's successors have followed in his footsteps. The means used to further this policy meet with the writer's severest condemnation.

The Franco-Russian alliance was a set-back to Germany, and she has tried ever since to find means to weaken Russia's power: it was, indeed, mainly German influence which induced Russia to adopt an attitude which left Japan no alternative but a declaration of war.

The alliance of France with Russia is not, however, regarded in Germany as militating against the isolation of France to nearly the same extent as does the Anglo-French *entente*. England is, in reality, the only nation seriously feared in Berlin, because against her alone of all the nations Germany is powerless to take agressive action, and she alone can pit against Germany a real offensive force—namely, a predominating navy. The cementing of this *entente* more than compensates for the severe political defeat sustained by France at the hands of Germany at the Algeciras Conference—a defeat which should never have been experienced, seeing that Germany had no intention of and no object in declaring war at that time.

With England at her back France can afford to ignore German bluff and attempts at intimidation. A triple *entente* between England, France, and Russia forms a safeguard against German aggression, and were Italy to throw in her lot definitely with these three, the peace of Europe would be ensured.

Such are the opinions of M. Mévil, whose book serves at least to throw many side lights on the political history of Europe during the past thirty-eight years.

STRATEGICAL AND TACTICAL.

Java's Means of Defence against a Foreign Enemy. (Java's Weervermogen tegen een buitenlandschen vijand.) By Lieut.-Col. F. Hering. Republished from De Indische Gids. 17 pp. 8vo. Amsterdam, 1909.

The object of this pamphlet is to plead for the organization of the defence of Java on a national basis. The author considers that with the troops which would be available in case of an invasion the offensive-defensive would be the best tactics to adopt. The enemy's disembarkation should be delayed and his communications interrupted. Small detachments of native troops should be employed to hang on the enemy's flanks and rear. As regards the question of native officers, the author sees no reason why the same standard of education should be demanded from native candidates as is expected in the case of European officers.

The Manchuria-Korea Theatre of Operations, and our Probable Antagonists there, Japanese, Chinese and Korean. (Маньчжурско-Корейскій Театръ, и наши вѣроятные въ немъ противники, японцы, китайцы, и корейцы.) By L. Radus-Zenovitch. 124 pp. 16mo. Vilna, 1909. "Russki Pochin." 1/4¼.

This work is a study of Manchuria and the adjacent territories from a strategic point of view. The great geographical features, the resources of the country, and the lines of communication existing and projected are all examined in detail. The author sketches the movement of Russia to the East, the rise of Japan, and her commercial and economic interests. He also points to the military development of China, and considers that she may have to be reckoned upon as an important military factor before long. He is of opinion that Japan, in spite of her success in the war with Russia, 1904-5, is by no means satisfied with the result, which she considers to have been indecisive; and he proceeds to show how she is strenuously preparing to renew the struggle at an early date.

"The Japanese consider it desirable to settle final accounts with Russia as soon as possible so as to weaken her irremediably in Asia."

The review of the theatre of operations shows that the most important localities in the event of hostilities will be the valleys of the Liao Ho and of the Upper Sungari in Manchuria, and the north-east portion of Korea about Cherien and the River Tiumen. The anxiety of the Japanese to develop railway communication is remarked upon, and attention is particularly drawn to the railway from Keng Sheng (near Possiet Bay) completed to Cherien and to a line from Gensan to Keng

Sheng, as well as to the Antung-Mukden line, recently a source of serious dispute.

After discussing the extraordinary growth of the military expenditure of Japan since the war of 1904-5, and examining the recently improved facilities for the mobilization and transport of her troops, the author concludes that Japan, if abetted by China, could concentrate a very large army in Southern Manchuria and North-Eastern Korea by the end of the third week from the declaration of war. (Fifty trains per day are estimated for Mukden alone and fourteen trains into Cherien.)

In the same time it is reckoned that Russia can concentrate adequate forces in the Sungari-Nonni basin, always provided that the Trans-Siberian Railway remains intact, for if this line is damaged, the Japanese will forestall their opponents and occupy Harbin. The effect of the Amur Railway is not considered.

The map, though crude and of the "caterpillar" type, clearly illustrates the features alluded to in the text.

Some Remarks on the Battle of Rezonville, 16th August, 1870. (En marge de la bataille de Rezonville.) By General Cherfils. 44 pp., with 4 maps. 8vo. Paris, 1908. Berger-Levrault. 1/11.

This pamphlet contains some interesting notes on the Battle of Rezonville, especially in connection with the action of the cavalry. These are followed by an imaginary description of the lines on which the battle would be fought at the present time.

The most valuable part of the work is, however, the last chapter, in which the author deals with the moral aspect of the battle; he calls Rezonville the "bataille morale par excellence" of modern battles, and shows the great influence exercised by *moral* on the course of the fighting which alone saved Alvensleben from a crushing reverse. Though he criticises Alvensleben's action as rash, he admits that his conduct was that of a bold and determined leader, and says that he is really the man who, by his daring rashness, made the German Empire a reality.

The last three pages give a good description of the German conception of modern war, showing the enormous importance which should be attached to moral qualities, to patriotism, sense of duty and self-abnegation. General Cherfils agrees with the German view that an army "rotten with love of comfort and luxury, whose training and education are not imbued and thoroughly impregnated with the spirit of abnegation and self-sacrifice, is incapable of gaining victory and is ripe for defeat."

Impressions Formed on Field Service and Manœuvres. (Impressions de campagne et de manœuvres.) By Réginald Kann. 133 pp., with 5 sketch maps. 8vo. Paris, 1909. Lavauzelle. 2/6.

The author, who acted during the recent operations in Morocco as military correspondent of *Le Temps*, and whose knowledge of military affairs entitles him to speak with considerable authority, has written a volume of more than ordinary value. He served with the Boers during the late war in South Africa, and the frequent allusions to incidents in that campaign will cause his work to be read with special interest by British officers.

The book is divided into two parts, the first dealing with the fighting around Casablanca, the second with the German Imperial Manœuvres of 1908 and the French "Manœuvres du Centre" of the same year.

Part I. gives a clear narrative of the events which led to the trouble in Morocco in July 1907, and of the subsequent operations. These operations are divided into two campaigns, the first from the 7th August to the 31st December, 1907, the second from the commencement of 1908 to the 16th May, 1908; the latter is dealt with very exhaustively. The author emphasises the fact that a Colonial campaign, such as that of the French in Morocco, differs in every essential detail from one waged against a European Power, and that such experience as the troops engaged in it may acquire, so far from constituting a useful schooling, may prove to be actually detrimental as a preparation for Continental warfare Part I. concludes with a short discussion regarding the armament of the French troops, the question of the employment of machine guns being dealt with at length.

Part II. comprises a description in "narrative" form of the German Imperial Manœuvres and of the French "Manœuvres du Centre," followed by criticisms of, and comparisons between, the two. M. Kann admits that it is hardly possible to draw, even from grand manœuvres, a just comparison between the relative merits and demerits of the armies of different nations, but it has been his endeavour to differentiate as regards salient points, between the systems and methods employed by each army, as evidenced in the manœuvres witnessed by him. The main points discussed are the following:—

The higher commands.
The tactical employment of infantry.
The tactical employment of cavalry.
Artillery and machine guns.
Combined action.

Special reference is made to the extreme importance attached by all commanders to a reliable system of intercommunication, and the failure to provide such a system is strongly commented upon in the case of the French manœuvres.

The author supports his views by quotations from the writings of soldiers of high standing, and the references made to incidents in past campaigns enhance the interest of the volume.

Co-operation Between the Arms. (La Liaison des Armes.) By General Percin. 89 pp. 8vo. Paris, 1909. Chapelot. 1/8.

The volume is devoted entirely to a discussion regarding the best means to be adopted to ensure the effective support of infantry by artillery fire. General Percin commences with a brief description of various experiments carried out by units of the XIIIth Army Corps, and the deductions he draws are based on these experiments and on the experiences gained during the manœuvres of 1908.

In the author's opinion artillery fire can be best regulated so as to afford effectual support to the infantry by a combination of what he terms "liaison par le haut," and "liaison par le bas." The common objective of both arms is to be determined by the former, the best means of securing that objective by the latter. In other words, the higher commander, having designated the main points on which the infantry attack is to be concentrated, the artillery commander should allot the supporting artillery for each zone; this done, it remains for the "liaison par le bas" to ensure that the artillery is placed in possession of information which is sufficiently accurate to admit of the guns using their fire to the best effect. Various suggestions are put forward to secure this object, and the conclusion reached is that an "agent de liaison" should accompany the officer directing the infantry attack in each zone, such "agent" being either an officer or non-commissioned officer of artillery whose sole duty it is to convey to the artillery the wishes of the commanding officer whom he accompanies, and such other information as may lead to more effective artillery fire.

The means of transmitting messages from the "agent" to the guns is discussed with much detail. The telephone is considered unreliable, and the suggestion finding most favour is that a series of transmitting posts should be established, each post consisting of two infantrymen. It is contended that a simple signalling code can be devised, which, whilst not necessitating the employment of skilled men, will suffice to convey rapidly all information which is actually essential for the close support of the guns.

The volume serves at least to throw additional light on a complex problem, even though the solution it offers may not be regarded as one which is wholly satisfactory.

Successive Modifications introduced in Infantry Tactics. (Modifications successives apportées dans la Tactique de l'Infanterie.) By Lieutenant-Colonel Dencausse. 60 pp. 8vo. Paris, 1908. Chapelot. 1/-.

Colonel Dencausse, in dealing with the gradual evolution of infantry tactics, treats his subject under the three following headings:—

(1) A study of tactics from ancient times up to the Restoration.
(2) The tactics employed during the period embraced between the Crimean War and the Russo-Turkish War of 1877-78.
(3) Modifications in tactics introduced as the result of the experiences of late years, with special reference to the Russo-Japanese War.

He aims at assigning a cause for each successive change in the method of handling troops in the field, and quotes many specific instances in support of his theory that actual and usually disastrous experiences on the field of battle have alone been responsible for the introduction of every important tactical modification. The comparison drawn in Chapter IV. between the French Training Manuals of 1884, 1894, and 1904 is of considerable interest.

Tactics of To-day. By Colonel C. E. Callwell, C.B. 162 pp. 8vo. London, 1909. Blackwood. 2/6.

This is the second edition of this book, which was originally published in 1900. Some important alterations have been introduced as a result of experiences during the later stages of the South African War and of lessons learnt from the Russo-Japanese War.

The object of the volume is to point out how existing conditions necessitate sweeping modifications in the rules and principles of conducting combats which have been accepted up till recently. Branches of tactics which are not greatly affected by the introduction of modern weapons are but cursorily touched on, and a complete picture of tactics is not attempted.

The author deals in successive chapters with the principles of attack and defence, the tactics of infantry, mounted troops and artillery, and defence works. His conclusion with regard to attack and defence is that the latter has gained to a much greater extent than the former, due to the improvement in modern arms, owing to the larger proportion of the defending side which can be kept in reserve for offensive purposes, without unduly weakening the force allotted to the passive defence of a position.

Impressions of a Russian Staff Officer at the French Grand Manœuvres in 1908. (Impressions d'un Officier de l'état-major russe aux Manœuvres du Centre en 1908.) By V. v. D.

This paper appeared in the form of two articles in the *Journal des Sciences Militaires* for 1st and 15th June, 1909.

The author attended the German Imperial Manœuvres before visiting the French Manœuvres, with the result that he has been able to make useful and valuable comparisons between the two armies. His criticisms of the *personnel* of the French troops, their leaders, tactics, *moral*, &c., are exceedingly interesting and instructive, and a perusal of the two articles is recommended for all those who take an interest in the French and German Armies.

Combined Manœuvres in Italy, 1908. (Les Manœuvres Combinées en Italie.) By Commandant Defrasse. 20 pp., with 2 maps. 8vo. Paris, 1909. Berger-Levrault. 1/3.

The leading idea of these manœuvres was that a superior naval Power, based on Southern Italy, should endeavour to land a force of one and a half divisions on the Ligurian coast in spite of the opposition of a weak naval Power based on the Ligurian ports, who would be supported by one division of mobile Militia.

The naval operations and the land operations subsequent to disembarkation are given in some detail. There are no details as to the actual disembarkation or the establishment of a provisional naval base.

Invasion and Defence. By "Fabius." 200 pp. 8vo. London, 1909. Treherne. 2/-.

In the preface it is stated that the object of this book is to draw attention—

(1) To the probability of German invasion in the immediate future in much greater force than is generally supposed.

(2) To the false position in which our fleet is placed by being tied to our shores.

(3) To the fatal mistake it would be to employ our Territorial troops, while still imperfectly trained, to oppose disciplined armies in the open field.

(4) To the necessity for constructing fortified and entrenched positions as a means of gaining time for the organization of our reserves, the reception of reinforcements, and the training of untrained troops, and for the purpose of protecting vital points of the kingdom which are at present defenceless on the landward side.

(5) To the very great possibilities which might result from adopting at the outset this policy of defence.

The author gives an outline of the naval and military situation and of the present plan of defence, and then enlarges on his proposed alternative scheme, which he has worked out in some detail. He assumes that the position of Great Britain in the case of a really serious invasion would be exactly the same as that of the allied forces in Portugal during the Peninsular War, and bases his conclusions on the success which attended the defence of the lines of Torres Vedras. The imaginary siege of London is described and about three months after the outbreak of hostilities, during what is called the third stage of the siege, the offensive is adopted and the invaders are defeated.

TRAINING AND EDUCATION.

An Introduction to Military Geography. By Brigadier-General E. S. May, C.B., C.M.G. 274 pp., with maps and sketches. 8vo. London, 1909. Rees. 8/6.

This book will prove of great interest to students of strategy. The necessity of studying the question of frontiers and physical obstacles is apparent to all, but a concise account of their value, illustrated by campaigns, has been long required.

The descriptions of the French and German frontiers and strategical railways and canals proposed and in course of construction, are interesting. The chapters describing the geographical conditions of the war in Manchuria, the opening up of Siberia, Canada and Arabia, and examining the North-West Frontier of India from a strategical point of view, are perhaps the most valuable parts of the volume.

The author's intention is to arouse interest in the close relation which exists between war and the geographical conditions of its theatre, and this object the book fulfils.

Strategy of the Franco-German War. By Brevet-Major W.. D. Bird. 126 pp., with maps, sketches, and tables. 8vo. London, 1909. Rees. 6/-.

The lectures on this subject, which the author delivered at the Indian Staff College, are here presented in book form. After shortly describing events leading up to the outbreak of hostilities, he deals fully with the operations up to and including the Battle of Sedan, from a strategical point of view.

The facts have been taken from the official accounts of the war, and have been so arranged that the campaign can be studied from either the French or German side. A number of sketches show clearly the "supposed" and "real" positions of the opposing armies at various dates between 26th July and 1st August, and these, together with discussions on alternative plans of operations at critical junctures, greatly facilitate a close study of the campaign.

The volume concludes with twelve "Problems suggested by the Operations," and the Appendices include tables showing the "Organization of the French and German Armies in 1820" and the daily dispositions of the forces engaged.

Strategy of the Russo-Japanese War. By Brevet-Major W. D. Bird. 100 pp. 8vo. London, 1909. Rees. 4/6.

These lectures give a brief but clear general outline of the principal strategical lessons to be learnt from this campaign, and will prove of assistance in the study of more detailed accounts of the operations.

After a short description of the geographical and political factors, and of the events leading up to the war, the author divides his narrative of the operations into two phases, separated by the Battle of Liao-Yang, and concludes with a chapter on the lessons of the war.

Sketches throughout the text show the position of the contending forces clearly at various periods of the campaign, and the Appendices include details of the organization of troops and their approximate distribution and strength at specified dates and localities.

An Introduction to the History of Tactics, 1740-1905. By Captain A. F. Becke. 104 pp. 8vo. London, 1909. Rees. 3/6.

This short study of the history of tactics is published with the object of assisting candidates for examination. It is not intended to be an exhaustive treatise on the development of tactics, but merely to furnish the foundations for a more extensive study of the subject.

The author deals generally with the evolution of tactics from the time of Frederick the Great up to the present day, and divides these two and a half centuries into six periods.

The principal changes in each period are first generally described, and their effect is then briefly considered by individual arms, suitable battles being cited in illustration of the developments of the period.

In the Appendices, which comprise the last thirty pages of the book, Captain Becke discusses more fully the employment of column and line between 1723 and 1815, and maintains that the column formation as adopted by the French at this time, was only a formation of readiness and manœuvre, and not one for the decisive attack. He then deals in greater detail with the more important points in the tactics of the Russo-Japanese War, and in conclusion gives a series of questions, many of which are taken from papers that have been set at Militia competitive examinations, but all of which do not appear to be fully answered in this volume.

Tactical Discussions on the Ground. (Taktische Besprechungen im Gelände.) By Major Julius Hoppenstedt. 62 pp., with map. 8vo. Berlin, 1909. Mittler. 1/8.

The author, who belongs to the 40th Fusilier Regiment, quartered at Aachen, has selected a piece of ground on the Dutch frontier, immediately east of Maastricht, on which to work out his tactical problems which he offers for study to officers of all arms.

The problems deal with an advanced guard action, an encounter combat, and a battle fought on a definite plan, each phase resulting from the one preceding it.

The opposing forces consist of the VIIth and VIIIth Army Corps and it is interesting to note that the author apportions a machine gun company to one infantry regiment in each brigade.

The problems are interesting and instructive.

The Practical Training and Education of a Company. (Die practische Ausbildung und Schulung der Kompagnie.) By Captain Rucker, German Army. 142 pp. 8vo. Berlin, 1909. Mittler. 3/-.

This is the first part of a work of which the second part (dealing with musketry and field training) is in course of preparation.

In an introduction the author advocates that drill and instruction in field duties should proceed concurrently, since an undue preponderance of drill in the early stages gives false impressions to men. Conversely a man who realises the demands of a modern battle will appreciate the importance of strict drill.

The book contains two sections devoted respectively to drill and the combat. In dealing with the former the author warns against undue repetition with a view to correcting mistakes, and against undue prolixity in giving explanations. The less marching past is practised the better will it be carried out.

In the section on field duties the author, amongst other things, lays down the following :—

> Tactical discussions are a good means of instructing N.C.O.'s. Instructions at field exercises should give every possible latitude to subordinate commanders whilst clearly indicating the object in view. Full information should be given concerning neighbouring units whether real or imaginary. Great attention should be devoted to the wording of all orders.
>
> All ranks must be trained to fill positions higher than those normally assigned to them. Men should constantly be trained to watch distant objects with a view to improving their sight. When practising firing exercises, living targets are preferable to points in a landscape. In order to simulate the noise of the battlefield, drums should be beaten and bugles blown immediately in rear of the unit. As an aid to judging distance, the exact distances between various points on a drill ground should be known to the men. Volleys should not altogether be neglected. To inculcate economy in ammunition, all rounds with a company should be

distributed amongst a small proportion of it, the rest noting the time taken to expend it. In extended order sections of a company should be directed independently by commanders instead of marching by a section on a flank—valuable training is thus afforded to leaders of smaller units.

Thorough reconnaissance is a necessary preliminary to all good leading. Every commander should, when approaching unknown ground, move well in front of his command. This "hasty reconnaissance" is characterised as most important. A few men should constantly be sent out to reconnoitre *during a fight.*

"Schemes" for field days need not end in "fights." In peace exercises account must be taken of the reconnoitring activity of an enemy who is not represented by troops.

At field exercises things should be allowed to take their course. Instructions can be gathered from any kind of situation. The handling of units at war strength is essential for all leaders.

Reinforcements should, if possible, adjust sights before joining a firing line, but men firing should be trained to call out the range to newly-arrived men or parties. Each man must know his fire-unit commander but men's attention should not be distracted by too much "re-forming."

Commanders joining a firing line should not assume command until a situation has been thoroughly grasped. Engagements must not terminate with the capture of a position. Rallying and pursuit should be practised. In pursuing through a wood, much noise should be made with a view to alarming a retreating enemy.

The work is full of valuable hints for infantry officers.

Notes on Visual Training and Judging Distance. By Quartermaster-Sergeant-Instructor Bostock 56 pp., with numerous illustrations. 12mo. London, 1909. Gale and Polden. -/6.

A useful little book for instructors and others. It contains hints as to how the eyesight and powers of observation may be improved, and insists on the necessity for training in judging distance being regarded as of equal importance as accuracy in shooting.

The Old Story. (Vieille Routine.) By General Devauraix. 90 pp. 8vo. Paris, 1909. Charles-Lavauzelle. 1/3.

The author begins by insisting on the extraordinary devotion with which all ranks of the army, and especially regimental officers, threw themselves into the work of renovating the army after the terrible losses of 1870. He then speaks of the cramping effect of "routine," and is of opinion that even the disasters of 1870 were not sufficient to open the eyes of the French to the cramping effect of a dull round of uninteresting duties.

He speaks of the faulty syllabus of St. Cyr, and of the lack of concentration on such studies as are calculated to make useful officers, and thinks that the most recent successes gained by the French Army, those of 1859 were won in spite of indifferent military education and training, and may be attributed chiefly to the mistakes of their opponents. In the opinion of the author, much of the military instruction of the day is lacking in variety and interest, while many parade drills and exercises to music are more calculated to produce the precise execution of concerted movements on the stage of the "Moulin Rouge" than on the battlefield.

In conclusion, he insists on the fact that nothing can be improvised in war, and that an army is of value proportionate to the extent to which its previous education and training have been on the right lines. In short, that an army reaps in war only what has been sown in time of peace.

The Inculcation of Patriotism among the Rank and File. (L'éducation patriotique du soldat.) By Lieutenant M. Roland. 260 pp. 8vo. Paris, 1908. Perrin. 3/-.

The main idea of this book is that the conscripts come to barracks with an insufficient moral education for the proper execution of their duty and that during their two years of service the regimental authorities should supply this want. The author considers that a knowledge of the history of one's own country is necessary to the development of patriotism, and that the present complete ignorance of this subject, of which he furnishes examples, is due to bad teaching in primary schools.

He then speaks of the various agencies for the inculcation of patriotism among the rising generation, such as instruction in the family, school songs, military museums, and the study of history and geography.

Handbook of the Fulde Language. (Handbuch der Ful-Sprache.) By D. Westermann. 274 pp. 8vo. Berlin, 1909. Reimer. 8/-.

This work would be of the greatest assistance to anyone conversant with German and desirous of studying the Fulde language. It contains a German-Fulde dictionary, grammar and exercise book.

The author asserts that the Fulde language is more extensively spoken than perhaps any other in Northern Africa. The Fulde nation is to be found populating the country immediately south of the Sahara Desert from Senegambia to the Egyptian Soudan, sparsely in some parts and densely in others

What to Apply in Tactical Problems. By Capt. A. F. Becke. 173 pp. 8vo. London, 1909. Paul, Trench, Trübner. 3/6.

The object of this book is to help officers studying for promotion examinations and those who are called on to set and criticise simple tactical schemes, and for these purposes it should prove of assistance.

The author lays stress on the application of the general principles contained in the official regulations and deprecates a rigid adherence to the wording of those publications, even for examination purposes.

The instructions under each sub-head are concise, well arranged, and appear up to date.

Catechism on Field Training. By Lieutenant-Colonel W. Plomer. 196 pp., with 28 plates and index. 8vo. London, 1909. Gale and Polden. 3/-.

The fourth edition of this book is on the same lines as previous editions. The revision was apparently concluded before the publication of "Field Service Regulations," Part I. as the references are to Combined Training.

The Entrance Examination Papers for the Staff College for 1909. (Die Aufgaben der Aufnahmeprüfung 1909 für die Kriegsakademie). By Major Krafft. 62 pp., with 9 figures in the text. 8vo. Berlin, 1909. Mittler. 1/6.

The papers are set on the following subjects: military history, minor tactics, applied tactics, arms and ammunition, fortification, reconnaissance, sketching, history, strategical geography, languages and mathematics. Solutions to all questions are given.

(*To be continued.*)

4/84

UNIVERSITY OF ILLINOIS-URBANA
3 0112 108093011